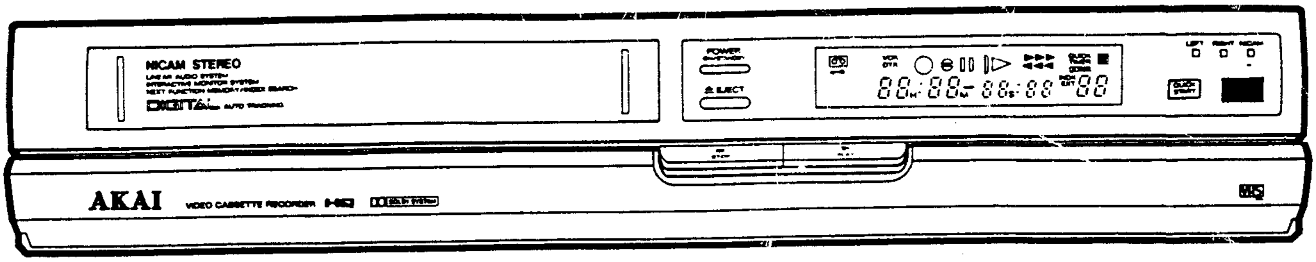
AKAI SERVICE MANUAL



HQ VHS
HIGH QUALITY PAL

VIDEO CASSETTE RECORDER

MODEL VS-422EOH
MODEL VS-425EM/EOG/EOH
MODEL VS-427, 467, 485EK

SPECIFICATIONS

Format	EK	VHS standard
	EM/EOG/EOH	VHS standard(PAL, MESECAM)
Video recording system		Rotary, slant azimuth two-head helical scan system
Rotary heads	EXCEPT 467EK	2 video heads
	467EK	3 video heads
RF input	EK	System I UHF ch 21 - 69
	EM	System B, G (PAL, SECAM)
	Middle East	VHF ch 2 - 12 UHF ch 21 - 69
	EOG	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12 UHF ch 21 - 69 Cable ch S1' - S3', S1 - S20
	EOH	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12 UHF ch 21 - 69 Cable ch S1' - S3', S1 - S41
RF output	EK	System I type modulation UHF ch 30 - 39 adjustable(preset ch 36)
	EM	System B type modulation VHF ch 3, 4 switchable(preset ch 4)
	EOG/EOH	System G type modulation UHF ch 30 - 39 adjustable(preset ch 36)
Recording(line input)	EK	PAL
	EM/EOG/EOH	PAL, SECAM(recorded as MESECAM)
Playback(line output)	EK	PAL
	EM/EOG/EOH	PAL, SECAM(MESECAM Tape)
Video	Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
	Line output level	1.0 Vp-p/75 ohms, unbalanced
	SN ratio	more than 45dB
	Horizontal resolution	more than 250 lines
Audio	Line input level	-6 dBs/ 50 K ohms, unbalanced
	Line output level	-6 dBs/ 1 K ohms, unbalanced
S/N ratio	EXCEPT EK	more than 40 dB
	EK	more than 36 dB (improves by 8.5 dB with Dolby NR ON
Frequency response	EXCEPT EOG	70 - 10,000 Hz
	EOG	80 - 10,000 Hz
Recording/playback time		240 min. with E-240 cassette in SP mode
Tape speed		23.39 mm/sec.
Quick finder		approx. 5 or 15 times normal speed
FF, REW time		approx. 5 min. with E-180 cassette
Timer	Program	8 program / 1 year and QUICK TIMER
	Clock reference	Quartz crystal
Display		TV screen & FL(Tape counter, Timer etc.)
Power requirements	422EOH/425EOG/425EOH	220 V AC, 50 Hz
	425EM	110-127/220-240 V AC, 50/60 Hz
	427EK/467EK/485EK	240 V AC, 50 Hz
Power consumption	425EM/427EK/467EK	36 W
	422EOH/425EOH/425EOG	37 W
	485EK	38W
Operating temperature		5°c - 40°c
Dimensions	422EOH/427EK/467EK/485EK	425(W) × 82(H) × 318(D) mm
	425EM/425EOG/425EOH	425(W) × 82(H) × 310(D) mm
Weight		5.0 Kg

Standard accessories

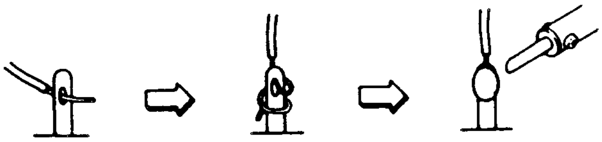
	(except EK model)	(EK model)
Connection cord	1	1
Remote control unit	1	1
Batteries for remote control	2	4
Function decal sheet	–	1
Operator's manual	1	1

- **For improvement purposes, specifications and design are subject to change without notice.**
- **Noise reduction manufactured under license from dolby laboratories licensing corporation. "DOLBY" and ◻◻ symbol are trade marks of dolby licensing corporation.**

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.

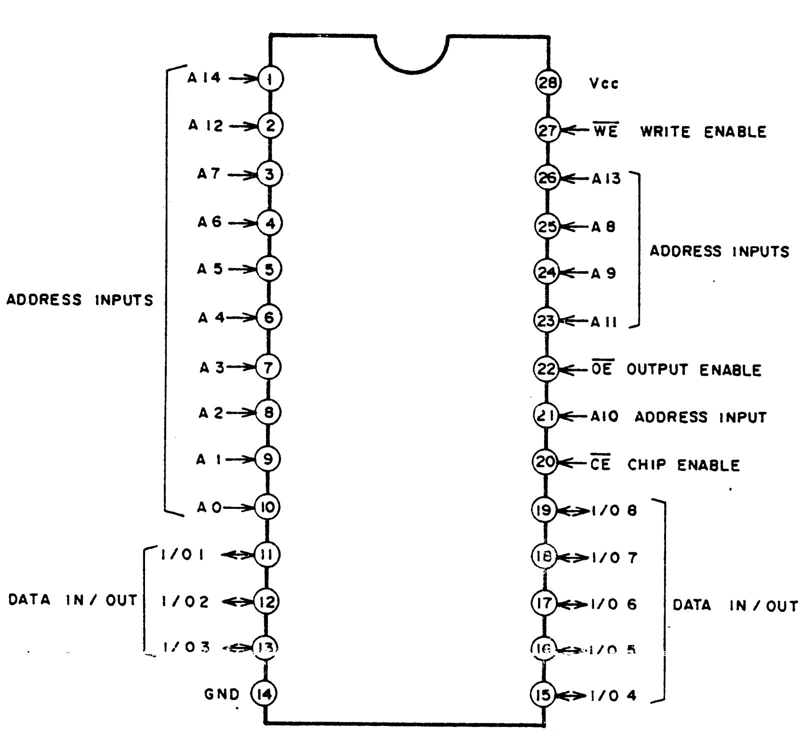


6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

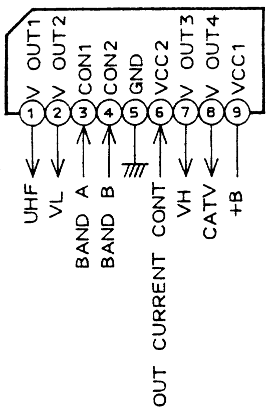
SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

CXK58256PF-12L (32768×8 BIT HI-SPEED STATIC RAM)


A14
A12
A7
A6
A5
A4
A3
A2
A1
A0
ADDRESS INPUTS
I/O1
I/O2
I/O3
DATA IN/OUT
GND
Vcc
WE WRITE ENABLE
A13
A8
A9
A11
ADDRESS INPUTS
OE OUTPUT ENABLE
A10 ADDRESS INPUT
CE CHIP ENABLE
I/O8
I/O7
I/O6
I/O5
I/O4
DATA IN/OUT

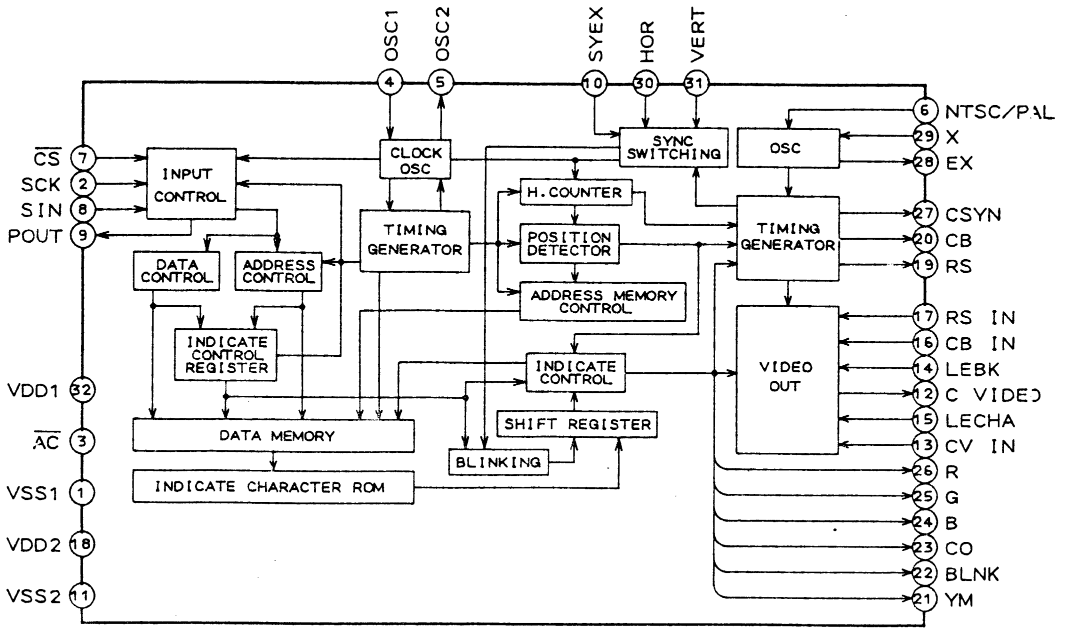
LA7910 (TUNER BAND SELECTOR)


V OUT1
V OUT2
CON1
CON2
GND
VCC2
V OUT3
V OUT4
VCC1
UHF
VL
BAND A
BAND B
OUT CURRENT CONT
VH
CATV
+B

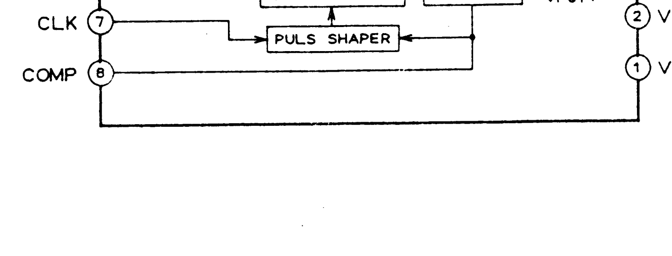
INPUT		OUTPUT			
CON1	CON2	V OUT1	V OUT2	V OUT3	V OUT4
L	L	H	Z	Z	Z
H	L	Z	H	Z	Z
L	H	Z	Z	H	Z
H	H	Z	Z	Z	H

Z:HIGH IMPEDANCE

M50455-142SP (CHARACTER GENERATOR)

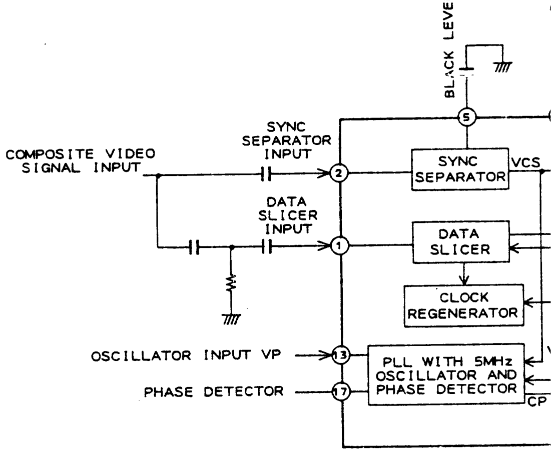

OSC1
OSC2
SYEX
HOR
VERT
NTSC/PAL
X
EX
CSYN
CB
RS
RS IN
CB IN
LEBK
C VIDEO
LECHA
CV IN
R
G
B
CO
BLNK
YM
CS
SCK
SIN
POUT
VDD1
AC
VSS1
VDD2
VSS2
INPUT CONTROL
CLOCK OSC
SYNC SWITCHING
OSC
H.COUNTER
POSITION DETECTOR
TIMING GENERATOR
TIMING GENERATOR
DATA CONTROL
ADDRESS CONTROL
ADDRESS MEMORY CONTROL
INDICATE CONTROL REGISTER
INDICATE CONTROL
VIDEO OUT
DATA MEMORY
SHIFT REGISTER
BLINKING
INDICATE CHARACTER ROM

MSM6965-3RS (1H CCD DELAY LINE)

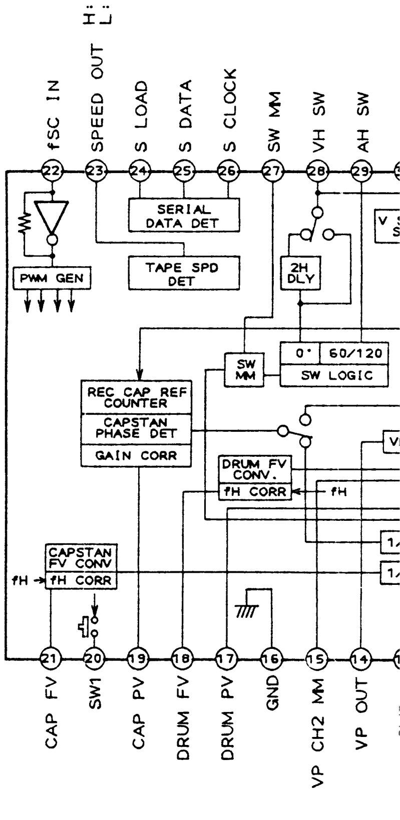

VOB
VIDEO IN
CLK
COMP
OUT
VCC
VSS
Vdd
CLAMP
CCD565 STEP
S/H
AUTO BIAS
CLOCK DRIVER
DUTY.DET
Vref
PULS SHAPER

S-8053ALR (C-MOS VOLTAG

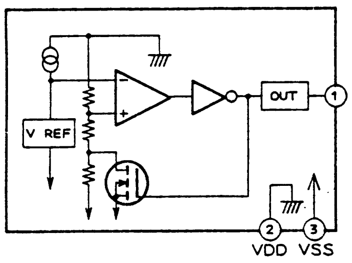
SAA4700 (VPS DATALINE P


BLACK LEVEL
COMPOSITE VIDEO SIGNAL INPUT
SYNC SEPARATOR INPUT
DATA SLICER INPUT
OSCILLATOR INPUT VP
PHASE DETECTOR
SYNC SEPARATOR
VCS
DATA SLICER
CLOCK REGENERATOR
PLL WITH 5MHz OSCILLATOR AND PHASE DETECTOR
CP

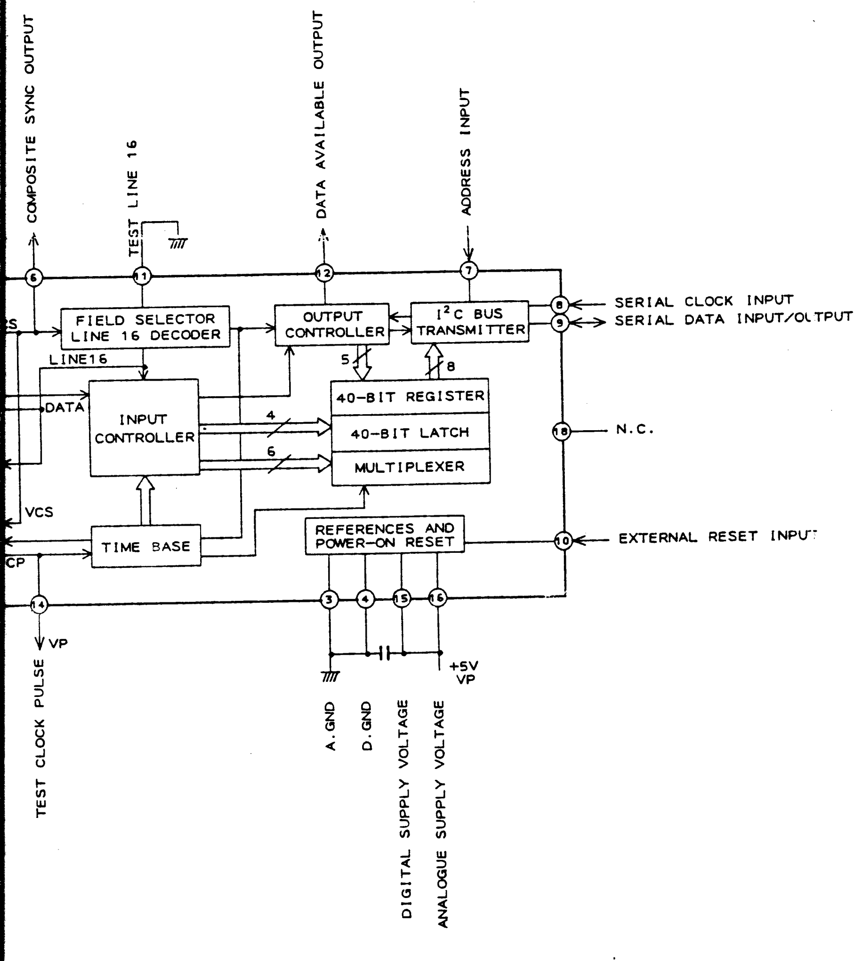
SX2777AS (DIGITAL SERVO)

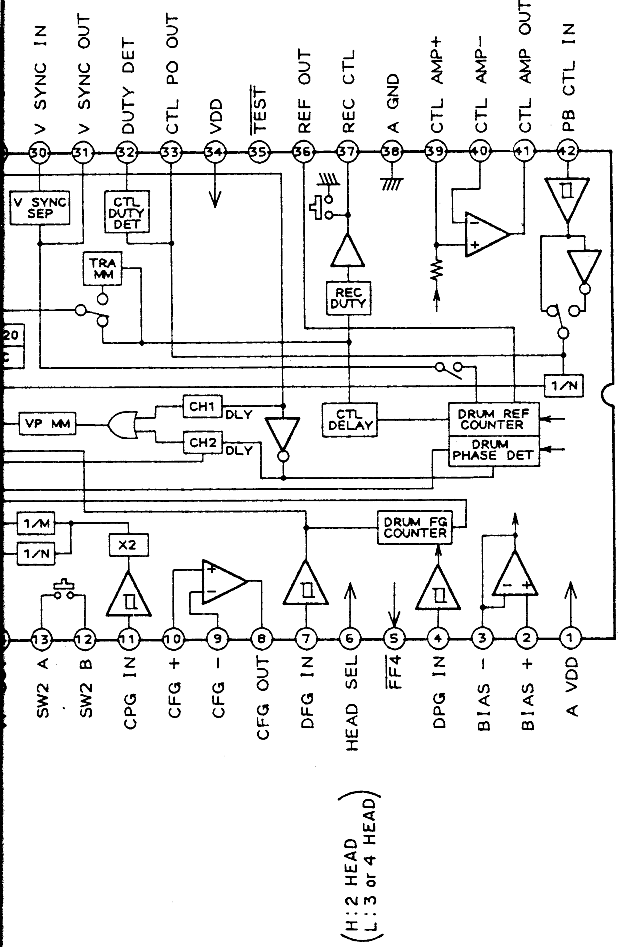

fSC IN
SPEED OUT H:SP L:LP
S LOAD
S DATA
S CLOCK
SW MM
VH SW
AH SW
SERIAL DATA DET
TAPE SPD DET
PWM GEN
2H DLY
0° 60/120
SW LOGIC
SW MM
REC CAP REF COUNTER
CAPSTAN PHASE DET
GAIN CORR
DRUM FV CONV.
fH CORR
fH
CAPSTAN FV CONV
fH CORR
fH
CAP FV
SW1
CAP PV
DRUM FV
DRUM PV
GND
VP CH2 MM
VP OUT

AGE DETECTOR)

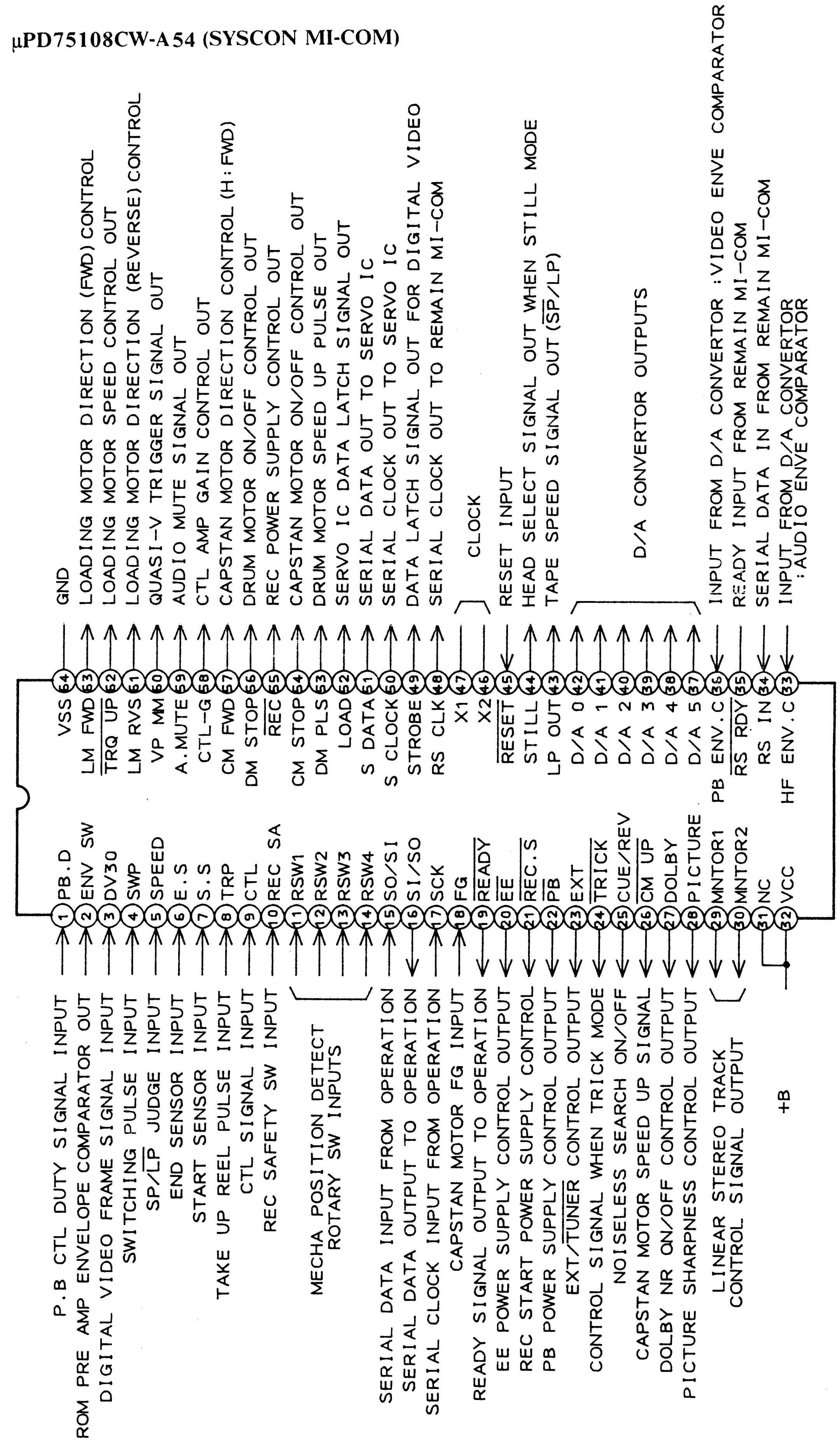

V REF
OUT
① OUT
② VDD
③ VSS

PROCESSOR)

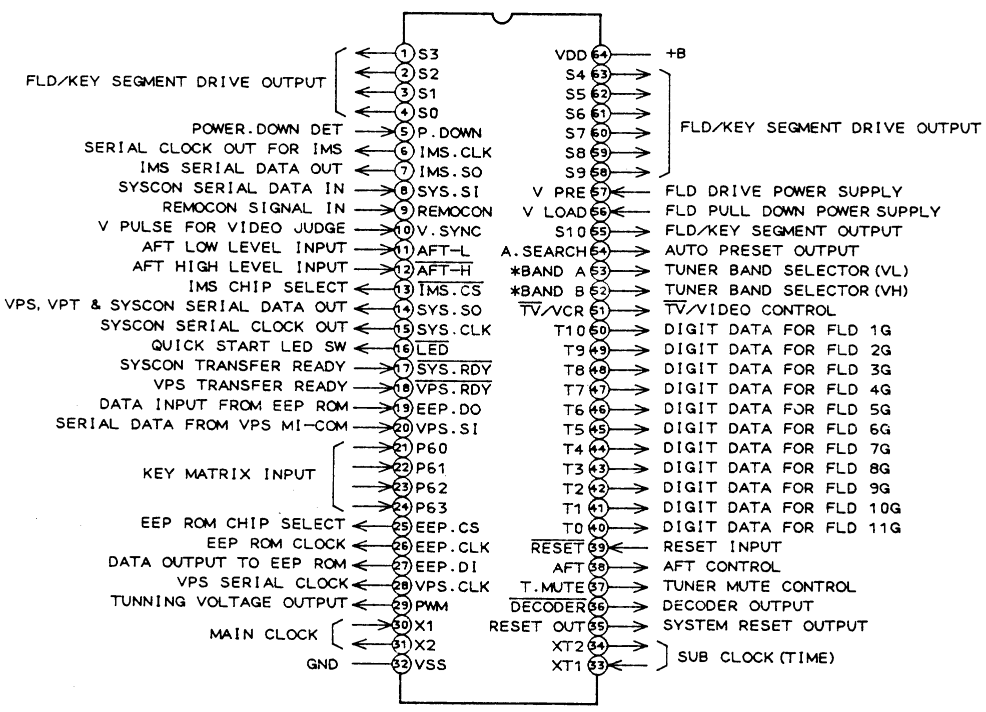

COMPOSITE SYNC OUTPUT
TEST LINE 16
DATA AVAILABLE OUTPUT
ADDRESS INPUT
FIELD SELECTOR LINE 16 DECODER
OUTPUT CONTROLLER
I²C BUS TRANSMITTER
SERIAL CLOCK INPUT
SERIAL DATA INPUT/OUTPUT
LINE16
DATA
INPUT CONTROLLER
40-BIT REGISTER
40-BIT LATCH
MULTIPLEXER
N.C.
VCS
TIME BASE
REFERENCES AND POWER-ON RESET
EXTERNAL RESET INPUT
CP
VP
+5V VP
TEST CLOCK PULSE
A.GND
D.GND
DIGITAL SUPPLY VOLTAGE
ANALOGUE SUPPLY VOLTAGE


V SYNC IN
V SYNC OUT
DUTY DET
CTL PO OUT
VDD
TEST
REF OUT
REC CTL
A GND
CTL AMP+
CTL AMP-
CTL AMP OUT
PB CTL IN
V SYNC SEP
CTL DUTY DET
TRA MM
REC DUTY
1/N
VP MM
CH1
CH2
DLY
CTL DELAY
DRUM REF COUNTER
DRUM PHASE DET
1/M
1/N
X2
DRUM FG COUNTER
SW2 A
SW2 B
CPG IN
CFG +
CFG -
CFG OUT
DFG IN
HEAD SEL
FF4
DPG IN
BIAS -
BIAS +
A VDD
(H : 2 HEAD
L : 3 or 4 HEAD)

μPD75108CW-A54 (SYSCON MI-COM)

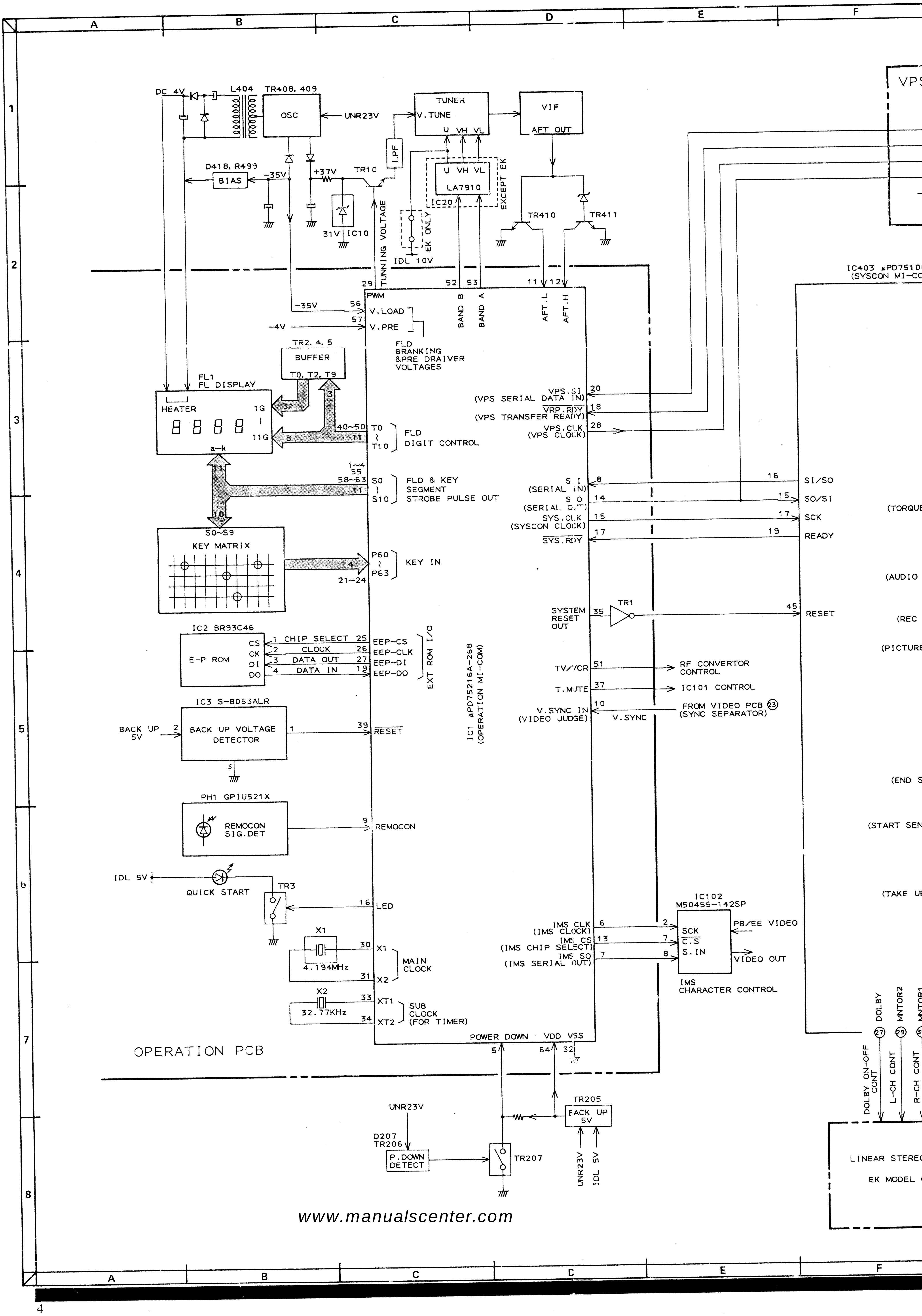

GND
LOADING MOTOR DIRECTION (FWD) CONTROL
LOADING MOTOR SPEED CONTROL OUT
LOADING MOTOR DIRECTION (REVERSE) CONTROL
QUASI-V TRIGGER SIGNAL OUT
AUDIO MUTE SIGNAL OUT
CTL AMP GAIN CONTROL OUT
CAPSTAN MOTOR DIRECTION CONTROL (H:FWD)
DRUM MOTOR ON/OFF CONTROL OUT
REC POWER SUPPLY CONTROL OUT
CAPSTAN MOTOR ON/OFF CONTROL OUT
DRUM MOTOR SPEED UP PULSE OUT
SERVO IC DATA LATCH SIGNAL OUT
SERIAL DATA OUT TO SERVO IC
SERIAL CLOCK OUT TO SERVO IC
DATA LATCH SIGNAL OUT FOR DIGITAL VIDEO
SERIAL CLOCK OUT TO REMAIN MI-COM
CLOCK
RESET INPUT
HEAD SELECT SIGNAL OUT WHEN STILL MODE
TAPE SPEED SIGNAL OUT (SP/LP)
D/A CONVERTOR OUTPUTS
INPUT FROM D/A CONVERTOR :VIDEO ENVE COMPARATOR
READY INPUT FROM REMAIN MI-COM
SERIAL DATA IN FROM REMAIN MI-COM
INPUT FROM D/A CONVERTOR :AUDIO ENVE COMPARATOR
(64) VSS
(63) LM FWD
(62) TRQ UP
(61) LM RVS
(60) VP MM
(59) A.MUTE
(58) CTL-G
(57) CM FWD
(56) DM STOP
(55) REC
(54) CM STOP
(53) DM PLS
(52) LOAD
(51) S DATA
(50) S CLOCK
(49) STROBE
(48) RS CLK
(47) X1
(46) X2
(45) RESET
(44) STILL
(43) LP OUT
(42) D/A 0
(41) D/A 1
(40) D/A 2
(39) D/A 3
(38) D/A 4
(37) D/A 5
(36) PB ENV.C
(35) RS RDY
(34) RS IN
(33) HF ENV.C
① PB.D
② ENV SW
③ DV30
④ SWP
⑤ SPEED
⑥ E.S
⑦ S.S
⑧ TRP
⑨ CTL
⑩ REC SA
⑪ RSW1
⑫ RSW2
⑬ RSW3
⑭ RSW4
⑮ SO/SI
⑯ SI/SO
⑰ SCK
⑱ FG
⑲ READY
⑳ EE
㉑ REC.S
㉒ PB
㉓ EXT
㉔ TRICK
㉕ CUE/REV
㉖ CM UP
㉗ DOLBY
㉘ PICTURE
㉙ MNTOR1
㉚ MNTOR2
㉛ NC
㉜ VCC
P.B CTL DUTY SIGNAL INPUT
FROM PRE AMP ENVELOPE COMPARATOR OUT
DIGITAL VIDEO FRAME SIGNAL INPUT
SWITCHING PULSE INPUT
SP/LP JUDGE INPUT
END SENSOR INPUT
START SENSOR INPUT
TAKE UP REEL PULSE INPUT
CTL SIGNAL INPUT
REC SAFETY SW INPUT
MECHA POSITION DETECT ROTARY SW INPUTS
SERIAL DATA INPUT FROM OPERATION
SERIAL DATA OUTPUT TO OPERATION
SERIAL CLOCK INPUT FROM OPERATION
CAPSTAN MOTOR FG INPUT
READY SIGNAL OUTPUT TO OPERATION
EE POWER SUPPLY CONTROL OUTPUT
REC START POWER SUPPLY CONTROL
PB POWER SUPPLY CONTROL OUTPUT
EXT/TUNER CONTROL OUTPUT
CONTROL SIGNAL WHEN TRICK MODE
NOISELESS SEARCH ON/OFF
CAPSTAN MOTOR SPEED UP SIGNAL
DOLBY NR ON/OFF CONTROL OUTPUT
PICTURE SHARPNESS CONTROL OUTPUT
LINEAR STEREO TRACK CONTROL SIGNAL OUTPUT
+B

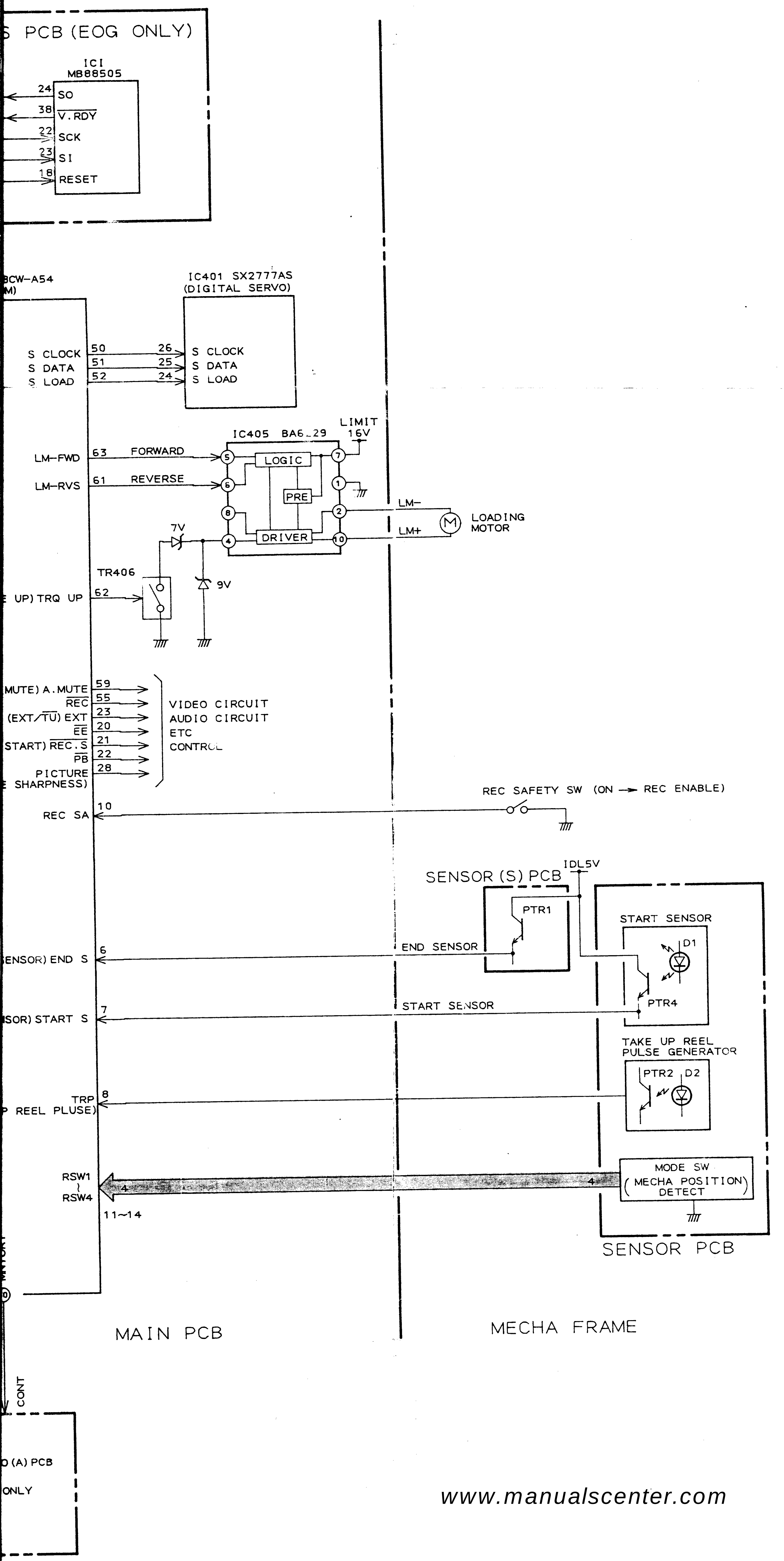
μPD75216A-268 (OPERATION MI-COM)


FLD/KEY SEGMENT DRIVE OUTPUT
POWER.DOWN DET
SERIAL CLOCK OUT FOR IMS
IMS SERIAL DATA OUT
SYSCON SERIAL DATA IN
REMOCON SIGNAL IN
V PULSE FOR VIDEO JUDGE
AFT LOW LEVEL INPUT
AFT HIGH LEVEL INPUT
IMS CHIP SELECT
VPS, VPT & SYSCON SERIAL DATA OUT
SYSCON SERIAL CLOCK OUT
QUICK START LED SW
SYSCON TRANSFER READY
VPS TRANSFER READY
DATA INPUT FROM EEP ROM
SERIAL DATA FROM VPS MI-COM
KEY MATRIX INPUT
EEP ROM CHIP SELECT
EEP ROM CLOCK
DATA OUTPUT TO EEP ROM
VPS SERIAL CLOCK
TUNNING VOLTAGE OUTPUT
MAIN CLOCK
GND
① S3
② S2
③ S1
④ S0
⑤ P.DOWN
⑥ IMS.CLK
⑦ IMS.SO
⑧ SYS.SI
⑨ REMOCON
⑩ V.SYNC
⑪ AFT-L
⑫ AFT-H
⑬ IMS.CS
⑭ SYS.SO
⑮ SYS.CLK
⑯ LED
⑰ SYS.RDY
⑱ VPS.RDY
⑲ EEP.DO
⑳ VPS.SI
㉑ P60
㉒ P61
㉓ P62
㉔ P63
㉕ EEP.CS
㉖ EEP.CLK
㉗ EEP.DI
㉘ VPS.CLK
㉙ PWM
㉚ X1
㉛ X2
㉜ VSS
VDD (64)
S4 (63)
S5 (62)
S6 (61)
S7 (60)
S8 (59)
S9 (58)
V PRE (57)
V LOAD (56)
S10 (55)
A.SEARCH (54)
*BAND A (53)
*BAND B (52)
TV/VCR (51)
T10 (50)
T9 (49)
T8 (48)
T7 (47)
T6 (46)
T5 (45)
T4 (44)
T3 (43)
T2 (42)
T1 (41)
T0 (40)
RESET (39)
AFT (38)
T.MUTE (37)
DECODER (36)
RESET OUT (35)
XT2 (34)
XT1 (33)
+B
FLD/KEY SEGMENT DRIVE OUTPUT
FLD DRIVE POWER SUPPLY
FLD PULL DOWN POWER SUPPLY
FLD/KEY SEGMENT OUTPUT
AUTO PRESET OUTPUT
TUNER BAND SELECTOR (VL)
TUNER BAND SELECTOR (VH)
TV/VIDEO CONTROL
DIGIT DATA FOR FLD 1G
DIGIT DATA FOR FLD 2G
DIGIT DATA FOR FLD 3G
DIGIT DATA FOR FLD 4G
DIGIT DATA FOR FLD 5G
DIGIT DATA FOR FLD 6G
DIGIT DATA FOR FLD 7G
DIGIT DATA FOR FLD 8G
DIGIT DATA FOR FLD 9G
DIGIT DATA FOR FLD 10G
DIGIT DATA FOR FLD 11G
RESET INPUT
AFT CONTROL
TUNER MUTE CONTROL
DECODER OUTPUT
SYSTEM RESET OUTPUT
SUB CLOCK (TIME)

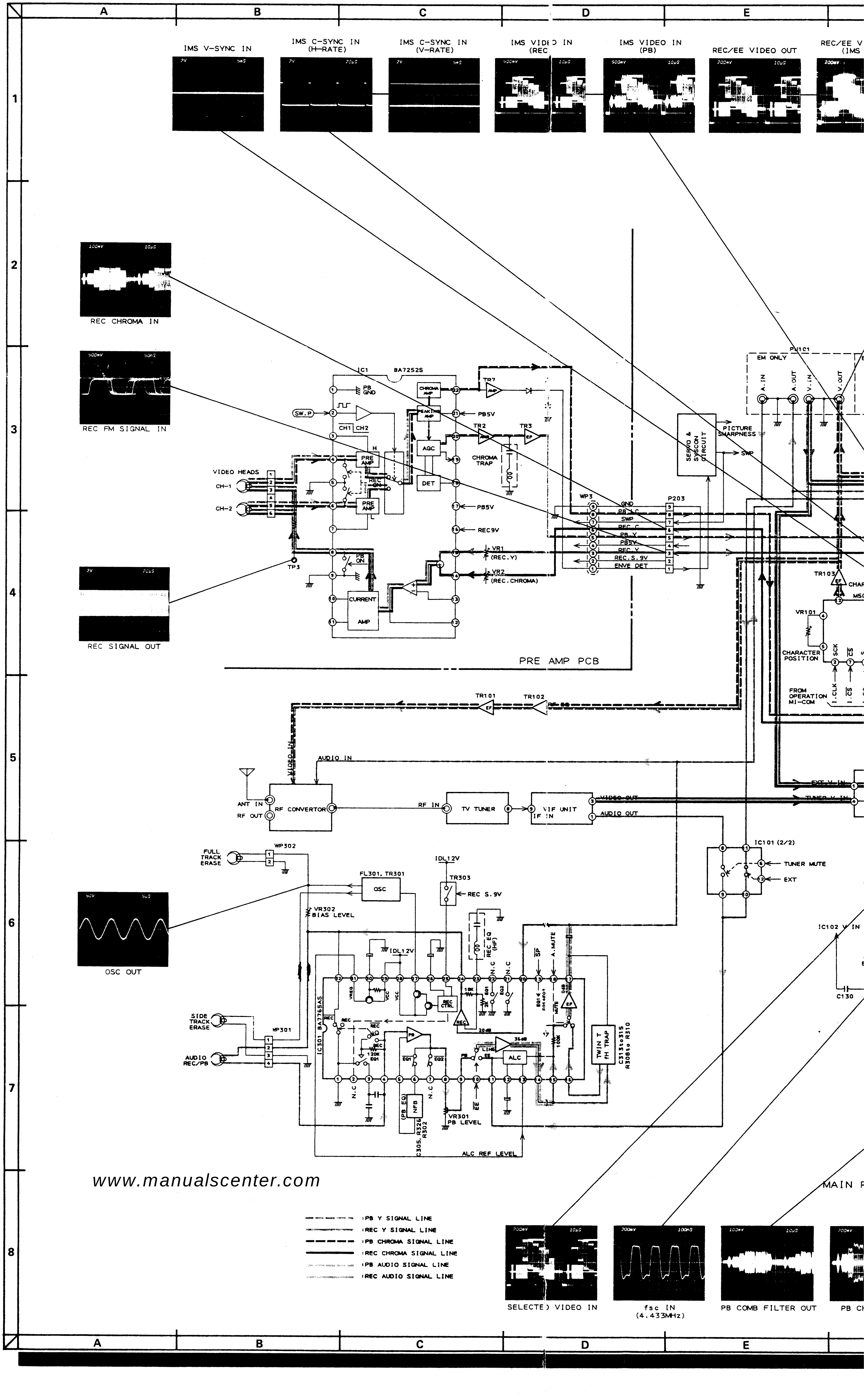
*

	A	B
VL	H	L
VH	L	H
U	L	L


A
B
C
D
E
F
1
2
3
4
5
6
7
8
DC 4V
L404
TR408, 409
OSC
UNR23V
TUNER
V.TUNE
U VH VL
VIF
AFT OUT
LPF
D418, R499
BIAS
-35V
+37V
TR10
U VH VL
LA7910
IC20
EXCEPT EK
EK ONLY
IDL 10V
31V
IC10
TUNNING VOLTAGE
TR410
TR411
29
PWM
52 53
11 12
BAND B
BAND A
AFT.L
AFT.H
-35V
56
V.LOAD
57
-4V
V.PRE
FLD
BRANKING
&PRE DRAIVER
VOLTAGES
TR2, 4, 5
BUFFER
T0, T2, T9
FL1
FL DISPLAY
HEATER
1G
11G
8 8 8 8
a~k
3
3
8
40~50
11
T0
T10
FLD
DIGIT CONTROL
1~4
55
58~63
11
S0
S10
FLD & KEY
SEGMENT
STROBE PULSE OUT
11
10
S0~S9
KEY MATRIX
4
P60
P63
21~24
KEY IN
IC2 BR93C46
E-P ROM
CS
CK
DI
DO
1 CHIP SELECT 25
2 CLOCK 26
3 DATA OUT 27
4 DATA IN 19
EEP-CS
EEP-CLK
EEP-DI
EEP-DO
EXT ROM I/O
IC1 μPD75216A-268
(OPERATION MI-COM)
IC3 S-8053ALR
BACK UP
5V
2
BACK UP VOLTAGE
DETECTOR
1
3
39
RESET
PH1 GPIU521X
REMOCON
SIG.DET
9
REMOCON
IDL 5V
QUICK START
TR3
16
LED
X1
4.194MHz
30
X1
31
X2
MAIN
CLOCK
X2
32.77KHz
33
XT1
34
XT2
SUB
CLOCK
(FOR TIMER)
OPERATION PCB
POWER DOWN
VDD VSS
5
64
32
UNR23V
D207
TR206
P.DOWN
DETECT
TR207
TR205
BACK UP
5V
UNR23V
IDL 5V
VPS.SI
(VPS SERIAL DATA IN)
20
VRP.RDY
(VPS TRANSFER READY)
18
VPS.CLK
(VPS CLOCK)
28
S I
(SERIAL IN)
8
S O
(SERIAL OUT)
14
SYS.CLK
(SYSCON CLOCK)
15
SYS.RDY
17
16
SI/SO
15
SO/SI
17
SCK
19
READY
SYSTEM
RESET
OUT
35
TR1
45
RESET
TV/VCR
51
RF CONVERTOR
CONTROL
T.MUTE
37
IC101 CONTROL
V.SYNC IN
(VIDEO JUDGE)
10
V.SYNC
FROM VIDEO PCB ㉓
(SYNC SEPARATOR)
IMS CLK
(IMS CLOCK)
6
IMS CS
(IMS CHIP SELECT)
13
IMS SO
(IMS SERIAL OUT)
7
2
7
8
IC102
M50455-142SP
SCK
C.S
S.IN
PB/EE VIDEO
VIDEO OUT
IMS
CHARACTER CONTROL
IC403 μPD7510
(SYSCON MI-CO
VPS
(TORQUE
(AUDIO
(REC
(PICTURE
(END S
(START SEN
(TAKE U
DOLBY
MNTOR2
㉗
㉙
DOLBY ON-OFF
CONT
L-CH CONT
R-CH CONT
LINEAR STEREO
EK MODEL


S PCB (EOG ONLY)
ICI
MB88505
24 SO
38 V.RDY
22 SCK
23 SI
18 RESET
BCW-A54
M)
IC401 SX2777AS
(DIGITAL SERVO)
S CLOCK 50 26 S CLOCK
S DATA 51 25 S DATA
S LOAD 52 24 S LOAD
IC405 BA6‿29
LIMIT
16V
LM-FWD 63 FORWARD
LM-RVS 61 REVERSE
LOGIC
PRE
DRIVER
7V
9V
LM-
LM+
LOADING
MOTOR
TR406
E UP) TRQ UP 62
MUTE) A.MUTE 59
REC 55
(EXT/TU) EXT 23
EE 20
START) REC.S 21
PB 22
PICTURE 28
E SHARPNESS)
VIDEO CIRCUIT
AUDIO CIRCUIT
ETC
CONTROL
REC SAFETY SW (ON → REC ENABLE)
REC SA 10
SENSOR (S) PCB
IDL5V
PTR1
END SENSOR
ENSOR) END S 6
START SENSOR
D1
PTR4
SOR) START S 7
START SENSOR
TAKE UP REEL
PULSE GENERATOR
PTR2
D2
TRP 8
P REEL PLUSE)
RSW1
RSW4
11~14
4
4
MODE SW
(MECHA POSITION DETECT)
SENSOR PCB
MAIN PCB
MECHA FRAME
CONT
D (A) PCB
ONLY

OPERATION & SYSCON
BLOCK DIAGRAM
NO.6-1 V110254M


A
B
C
D
E
1
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4
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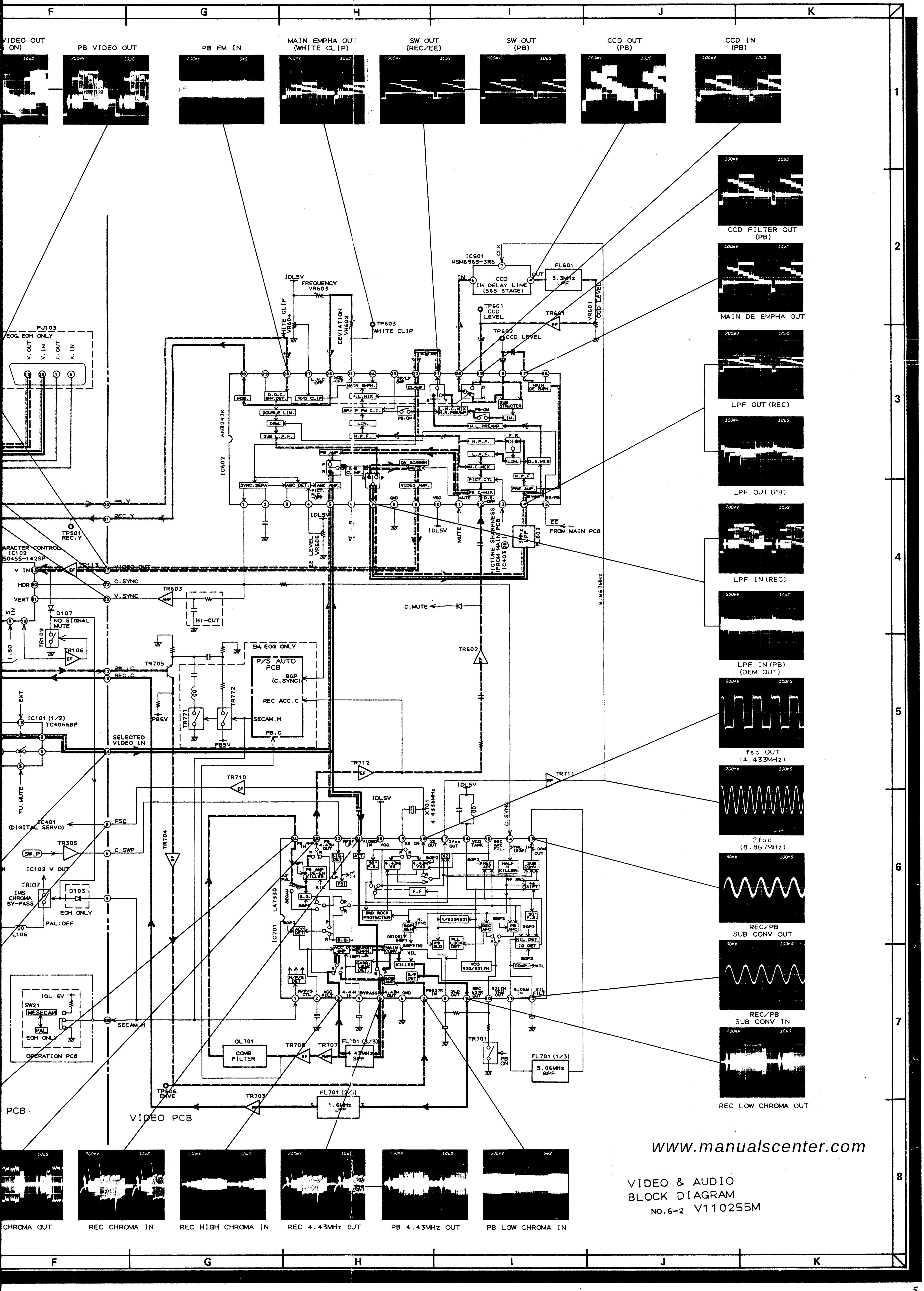
6
7
8
IMS V-SYNC IN
IMS C-SYNC IN (H-RATE)
IMS C-SYNC IN (V-RATE)
IMS VIDEO IN (REC
IMS VIDEO IN (PB)
REC/EE VIDEO OUT
REC/EE V (IMS
REC CHROMA IN
REC FM SIGNAL IN
REC SIGNAL OUT
OSC OUT
IC1 BA7252S
PB GND
SW. P
CH1 CH2
CHROMA AMP
PEAKING AMP
PB5V
AGC
DET
PRE AMP
REC ON
PB ON
CURRENT AMP
VIDEO HEADS
CH-1
CH-2
TP3
TR7
TR2
TR3
EF
CHROMA TRAP
REC9V
VR1 (REC. Y)
VR2 (REC. CHROMA)
WP3
P203
GND
PB Y.C
SWP
REC C
PB Y
PB5V
REC Y
REC. S. 9V
ENVE DET
SERVO & SYSCON CIRCUIT
PICTURE SHARPNESS
SWP
PRE AMP PCB
PU1C1
EM ONLY
A. IN
A. OUT
V. IN
V. OUT
TR103
CHAR
VR101
CHARACTER POSITION
SCK
CS
FROM OPERATION MI-COM
1. CLK
1. CS
TR101
TR102
RF SG
VIDEO IN
AUDIO IN
ANT IN
RF OUT
RF CONVERTOR
RF IN
TV TUNER
VIF UNIT IF IN
VIDEO OUT
AUDIO OUT
EXT V IN
TUNER V IN
IC101 (2/2)
TUNER MUTE
EXT
IC102 V IN
C130
FULL TRACK ERASE
WP302
FL301, TR301
OSC
IDL12V
TR303
REC S. 9V
VR302 BIAS LEVEL
REC EQ (HF)
N.C
SP
A. MUTE
IC301 BA7765AS
VREG
VCC
REC CTRL
EQ1
EQ2
EQ14
MUTE
0dB
20dB
36dB
PB
ALC
LINE
EE
TWIN T fH TRAP
C313 to 315 R308 to R310
SIDE TRACK ERASE
WP301
AUDIO REC/PB
PB EQ
NFB
C305, R326 R302
VR301 PB LEVEL
ALC REF LEVEL
MAIN P
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE
:PB AUDIO SIGNAL LINE
:REC AUDIO SIGNAL LINE
SELECTED VIDEO IN
fsc IN (4.433MHz)
PB COMB FILTER OUT
PB CH


F
G
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J
K
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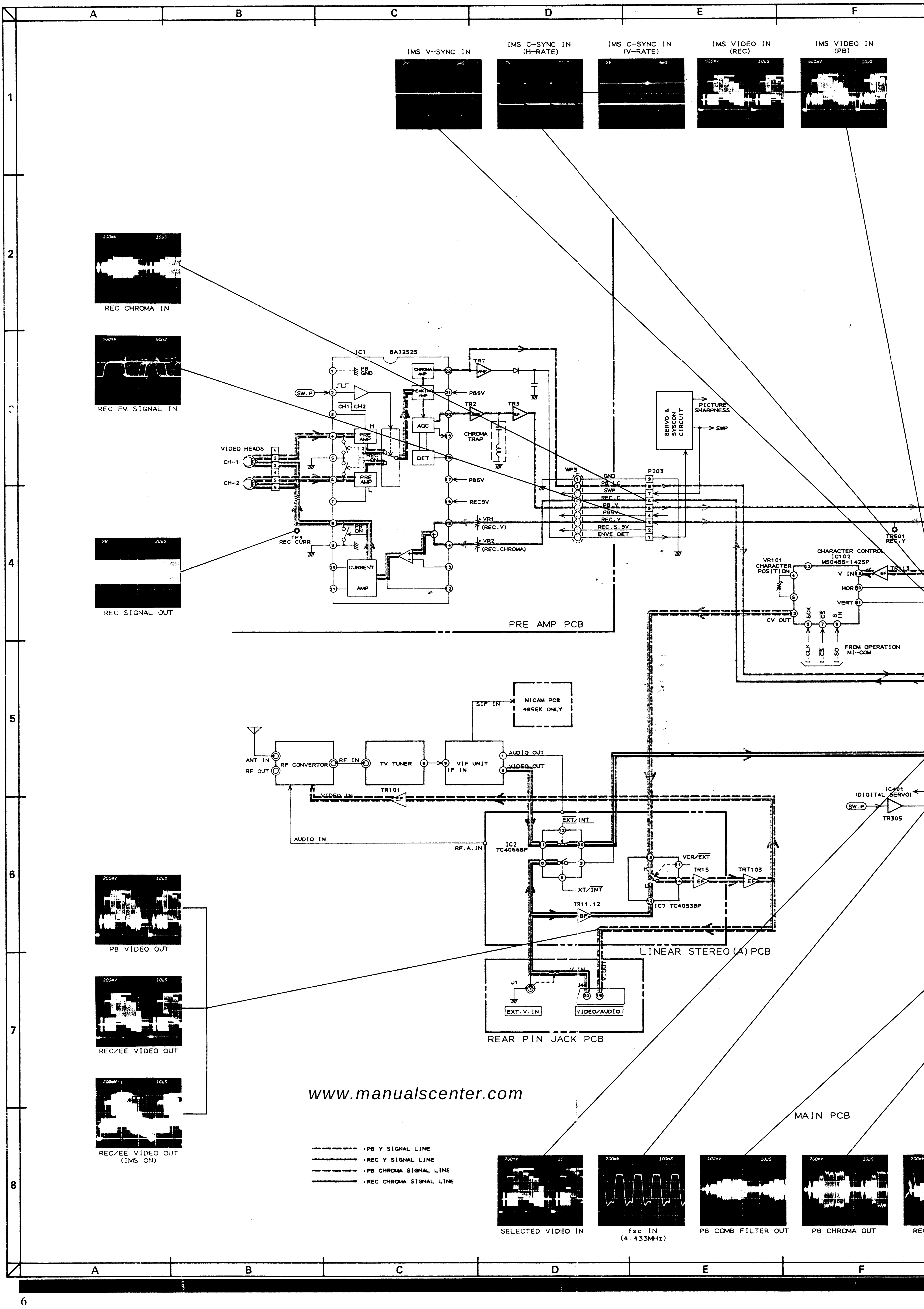
7
8
VIDEO OUT
ON)
PB VIDEO OUT
PB FM IN
MAIN EMPHA OUT
(WHITE CLIP)
SW OUT
(REC/EE)
SW OUT
(PB)
CCD OUT
(PB)
CCD IN
(PB)
CCD FILTER OUT
(PB)
MAIN DE EMPHA OUT
LPF OUT (REC)
LPF OUT (PB)
LPF IN (REC)
LPF IN (PB)
(DEM OUT)
fsc OUT
(4.433MHz)
2fsc
(8.867MHz)
REC/PB
SUB CONV OUT
REC/PB
SUB CONV IN
REC LOW CHROMA OUT
CHROMA OUT
REC CHROMA IN
REC HIGH CHROMA IN
REC 4.43MHz OUT
PB 4.43MHz OUT
PB LOW CHROMA IN
IC601
MSM6965-3RS
CCD
1H DELAY LINE
(565 STAGE)
FL601
3.3MHz
LPF
TP601
CCD
LEVEL
TP602
CCD LEVEL
TR601
VR601
CCD LEVEL
IDL5V
FREQUENCY
VR603
WHITE CLIP
VR604
DEVIATION
VR602
TP603
WHITE CLIP
PJ103
EOG, EOH ONLY
V.OUT
V.IN
A.OUT
A.IN
AN3247K
IC602
MOD.
D.O.C.
SW. DET.
W/D CLIP
MAIN EMPH.
L.L.MIX
CLAMP
L.N.C.MIX
N.R.PREAMP
SUB
STRUCTER
MAIN
DE EMPH
DOUBLE LIM.
DEM.
SUB L.P.F.
SP/LP FM C.I.
LIM.
H.P.F.
PB.ON
N.L.PREAMP.
L.P.F.
N.C.MIX
PICT.CTL
PB C-MIX
PRE AMP.
D.E.MIX
SYNC.SEPA
AGC DET.
AGC AMP.
PB AMP
ON SCREEN
MUTE
VIDEO AMP.
GND
VCC
MUTE
D.E.OFF
EE/PB
EE
FROM MAIN PCB
FL602
3MHz LPF
PICTURE SHARPNESS
(FROM MAIN PCB
IC403)
EE LEVEL
VR605
8.867MHz
PB.Y
REC.Y
TP501
REC.Y
CHARACTER CONTROL
IC102
50455-142SP
V IN
HOR
VERT
TR113
EF
VIDEO OUT
C.SYNC
V.SYNC
TR603
AMP
HI-CUT
C.MUTE
TR602
D107
NO SIGNAL
MUTE
TR109
TR106
EF
1.50
EXT
TR705
EM, EOG ONLY
P/S AUTO
PCB
BGP
(C.SYNC)
REC ACC.C
SECAM.H
PB.C
TR771
TR772
PB5V
PB.C
REC.C
IC101 (1/2)
TC4066BP
SELECTED
VIDEO IN
TU.MUTE
TR712
EF
TR710
EF
TR711
EF
IC401
(DIGITAL SERVO)
FSC
TR305
SW.P
C.SWP
IC102 V OUT
TR107
IMS
CHROMA
BY-PASS
D103
EOH ONLY
PAL:OFF
L106
TR704
EF
IDL5V
X701
4.4336MHz
C.SYNC
LA7330
IC701
PB AMP
B.DE-EM
KILLER
ATT
90°
P.S.
4.43M
X0
4.43
VXO
X2
REC
APC
HALF
H
KILLER
SUB
CONV
F.F
SRD ROCK
PROTECTER
B.G.
ACC
DET
BGP
GEN
1/320R321
PB
APC
KIL DET
ID DET
COMP.
MAIN
CONV
KILLER
CARR
LEAK
DET.
VCO
320/321fH
M/P/S
DET
B/P
DET
ACC
FILL
4.43M
IN
BYPASS
4.43M
OUT
GND
PB627K
IN
SLD
OUT
REC
627K
OUT
321fH
OUT
5.06M
IN
KIL
FILT
5.06M
OUT
IDL 5V
SW21
MESECAM
PAL
EOH ONLY
OPERATION PCB
SECAM.H
DL701
COMB
FILTER
TR708
EF
TR707
AMP
FL701 (3/3)
4.43MHz
BPF
TR701
PB
ON
FL701 (1/3)
5.06MHz
BPF
TP606
ENVE
TR703
EF
FL701 (2/3)
1.6MHz
LPF
PCB
VIDEO PCB

VIDEO & AUDIO
BLOCK DIAGRAM
NO.6-2 V110255M


A
B
C
D
E
F
1
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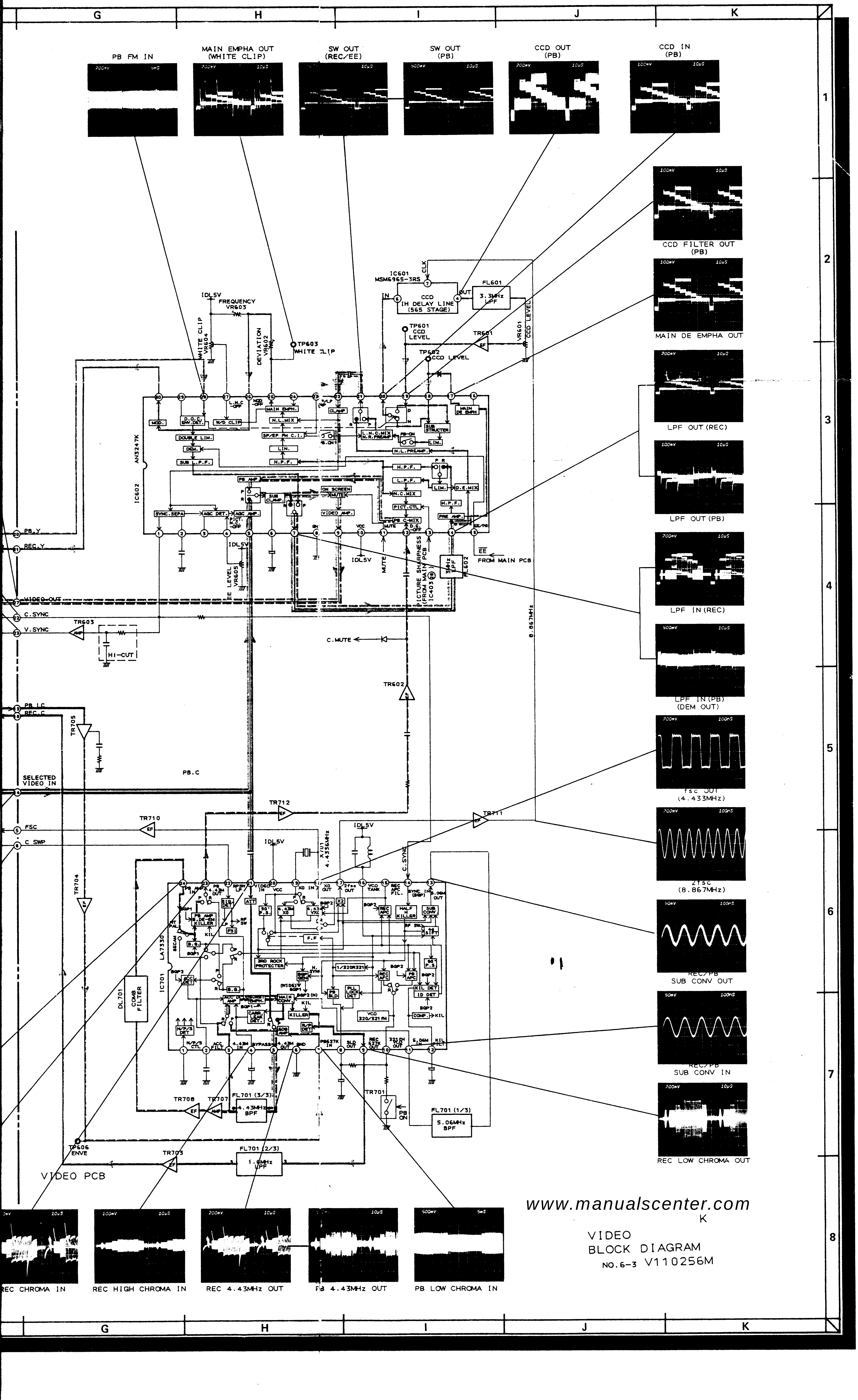
8
IMS V-SYNC IN
IMS C-SYNC IN (H-RATE)
IMS C-SYNC IN (V-RATE)
IMS VIDEO IN (REC)
IMS VIDEO IN (PB)
REC CHROMA IN
REC FM SIGNAL IN
REC SIGNAL OUT
IC1 BA7252S
PB GND
SW.P
CH1 CH2
CHROMA AMP
PEAKING AMP
TR7 AMP
PB5V
TR2 AMP
TR3 EF
AGC
DET
CHROMA TRAP
VIDEO HEADS
CH-1
CH-2
PRE AMP
REC ON
PB ON
TP3 REC CURR
CURRENT AMP
REC9V
VR1 (REC.Y)
VR2 (REC.CHROMA)
SERVO & SYSCON CIRCUIT
PICTURE SHARPNESS
SWP
WP3
P203
GND
PB.C
SWP
REC.C
PB.Y
PB5V
REC.Y
REC.S.9V
ENVE DET
PRE AMP PCB
TR501 REC.Y
CHARACTER CONTROL IC102 M50455-142SP
VR101 CHARACTER POSITION
V IN
HOR
VERT
CV OUT
SCK
CS
S IN
I.CLK
I.CS
I.SO
FROM OPERATION MI-COM
EF
NICAM PCB 485EK ONLY
SIF IN
ANT IN
RF OUT
RF CONVERTOR
RF IN
TV TUNER
VIF UNIT
IF IN
AUDIO OUT
VIDEO OUT
TR101
VIDEO IN
AUDIO IN
RF.A.IN
EXT/INT
IC2 TC4066BP
IC401 (DIGITAL SERVO)
TR305
VCR/EXT
TR15 EF
TRT103 EF
IC7 TC4053BP
TR11.12 BF
LINEAR STEREO (A) PCB
J1
J4
V.IN
V.OUT
EXT.V.IN
VIDEO/AUDIO
REAR PIN JACK PCB
PB VIDEO OUT
REC/EE VIDEO OUT
REC/EE VIDEO OUT (IMS ON)
MAIN PCB
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE
SELECTED VIDEO IN
fsc IN (4.433MHz)
PB COMB FILTER OUT
PB CHROMA OUT


G
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J
K
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4
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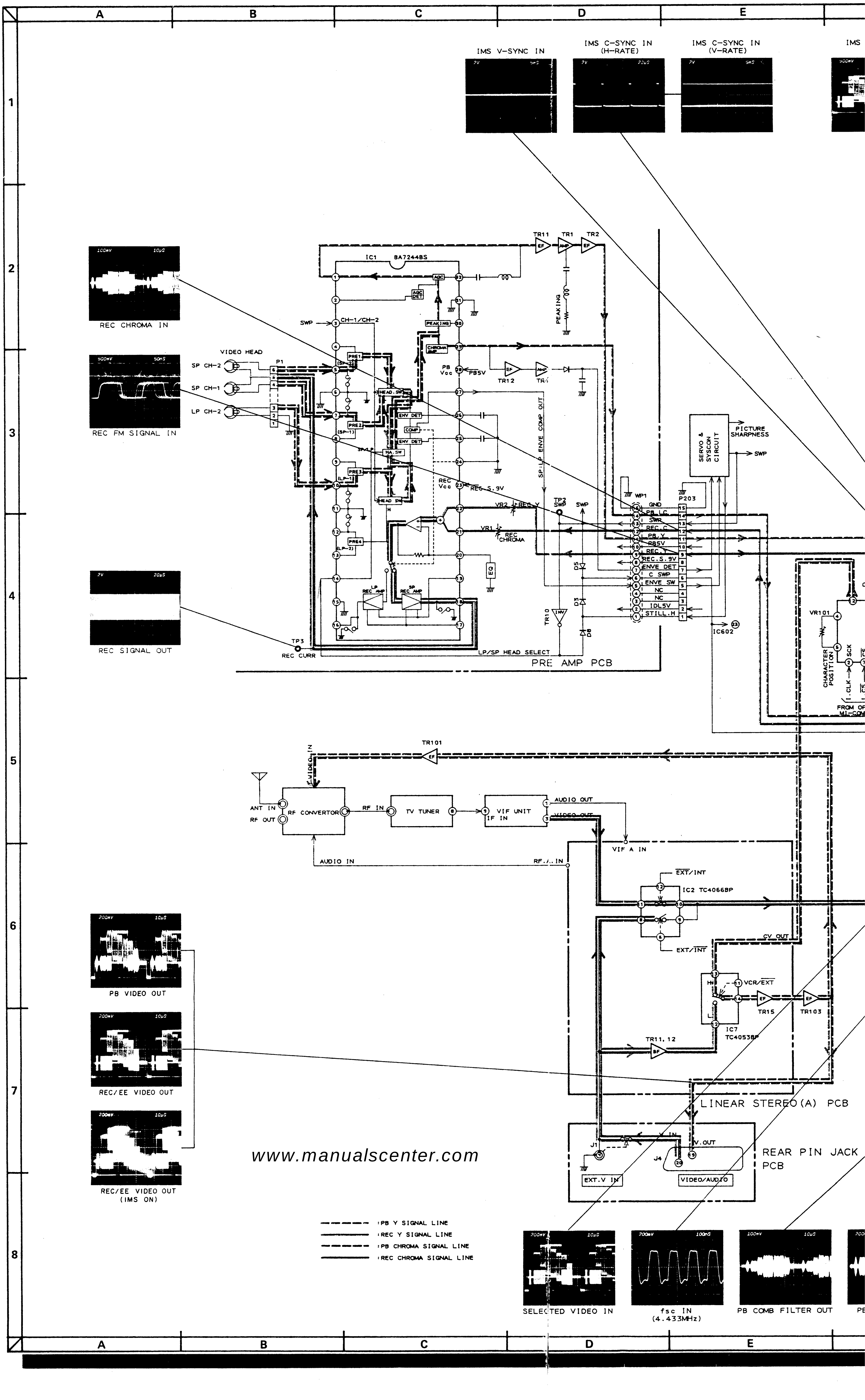
6
7
8
PB FM IN
MAIN EMPHA OUT (WHITE CLIP)
SW OUT (REC/EE)
SW OUT (PB)
CCD OUT (PB)
CCD IN (PB)
CCD FILTER OUT (PB)
MAIN DE EMPHA OUT
LPF OUT (REC)
LPF OUT (PB)
LPF IN (REC)
LPF IN (PB) (DEM OUT)
fsc OUT (4.433MHz)
2fsc (8.867MHz)
REC/PB SUB CONV OUT
REC/PB SUB CONV IN
REC LOW CHROMA OUT
REC CHROMA IN
REC HIGH CHROMA IN
REC 4.43MHz OUT
PB 4.43MHz OUT
PB LOW CHROMA IN
IC601 MSM6965-3RS
CCD 1H DELAY LINE (565 STAGE)
FL601 3.3MHz LPF
TP601 CCD LEVEL
TP602 CCD LEVEL
TR601
VR601 CCD LEVEL
IDL5V
FREQUENCY VR603
WHITE CLIP VR604
DEVIATION VR602
TP603 WHITE CLIP
IC602 AN3247K
MOD.
D.O.C. SW.DET.
L.N.C OFF
W/D CLIP
MOD OFF
MAIN EMPH.
N.L.MIX
SP/EP FM C.I.
L.N.C.MIX N.R.PREAMP
SUB STRUCTER
LIN.
N.L.PREAMP
CLAMP
DOUBLE LIM.
DEM.
SUB L.P.F.
H.P.F.
L.P.F.
N.C.MIX
PICT.CTL.
PB AMP
SUB CLAMP
ON SCREEN MUTE
VIDEO AMP.
PB C-MIX
D.E.MIX
PRE AMP.
MAIN DE EMPH
SYNC.SEPA
AGC DET.
AGC AMP.
PICT. H.C. OFF
MUTE
D.E. OFF
EE/PB
EE FROM MAIN PCB
FL602 3MHz LPF
PICTURE SHARPNESS (FROM MAIN PCB IC403 ⑳)
EE LEVEL VR605
VCC
PB.Y
REC.Y
VIDEO OUT
C.SYNC
V.SYNC
TR603
HI-CUT
C.MUTE
TR602
8.867MHz
PB.LC
REC.C
TR705
PB.C
SELECTED VIDEO IN
TR712
TR710
TR711
FSC
C SWP
TR704
X701 4.4336MHz
IC701 LA7330
DL701 COMB FILTER
PB AMP IN
PB 4.43M OUT
RP SW LPF
VIDEO IN
XO IN
XO OUT
2fsc OUT
VCO TANK
REC APC FIL.
SYNC IN (BGP)
5.06M OUT
PB AMP B.DE-EM KILLER
SIG DET.
ATT
90° P.S.
4.43M XO
4.43M VXO
REC APC
HALF H KILLER
SUB CONV
FSI
F.F
H SIFT
3RD ROCK PROTECTER
1/320R321
BGP GEN
REC APC
PB APC
90° P.S.
ACC DET
B.G.
ACC AMP
BURST EMPH.
MAIN CONV
PB SLD
PLL LOCK DET
KIL DET
ID DET
CARR. LEAK DET.
KILLER
VCO 320/321fH
COMP.
N/P/S DET
SOB AMP
R/P DET
N/P/S CTL
ACC FILT
4.43M IN
BYPASS
4.43M OUT
GND
PB627K IN
SLD OUT
REC 627K OUT
321fH VCO OUT
5.06M IN
KIL FILT
FL701 (3/3) 4.43MHz BPF
FL701 (1/3) 5.06MHz BPF
FL701 (2/3) 1.6MHz LPF
TR708
TR707
TR701
PB ON
TP606 ENVE
TR703
VIDEO PCB
K

VIDEO
BLOCK DIAGRAM
NO.6-3 V110256M


A
B
C
D
E
1
2
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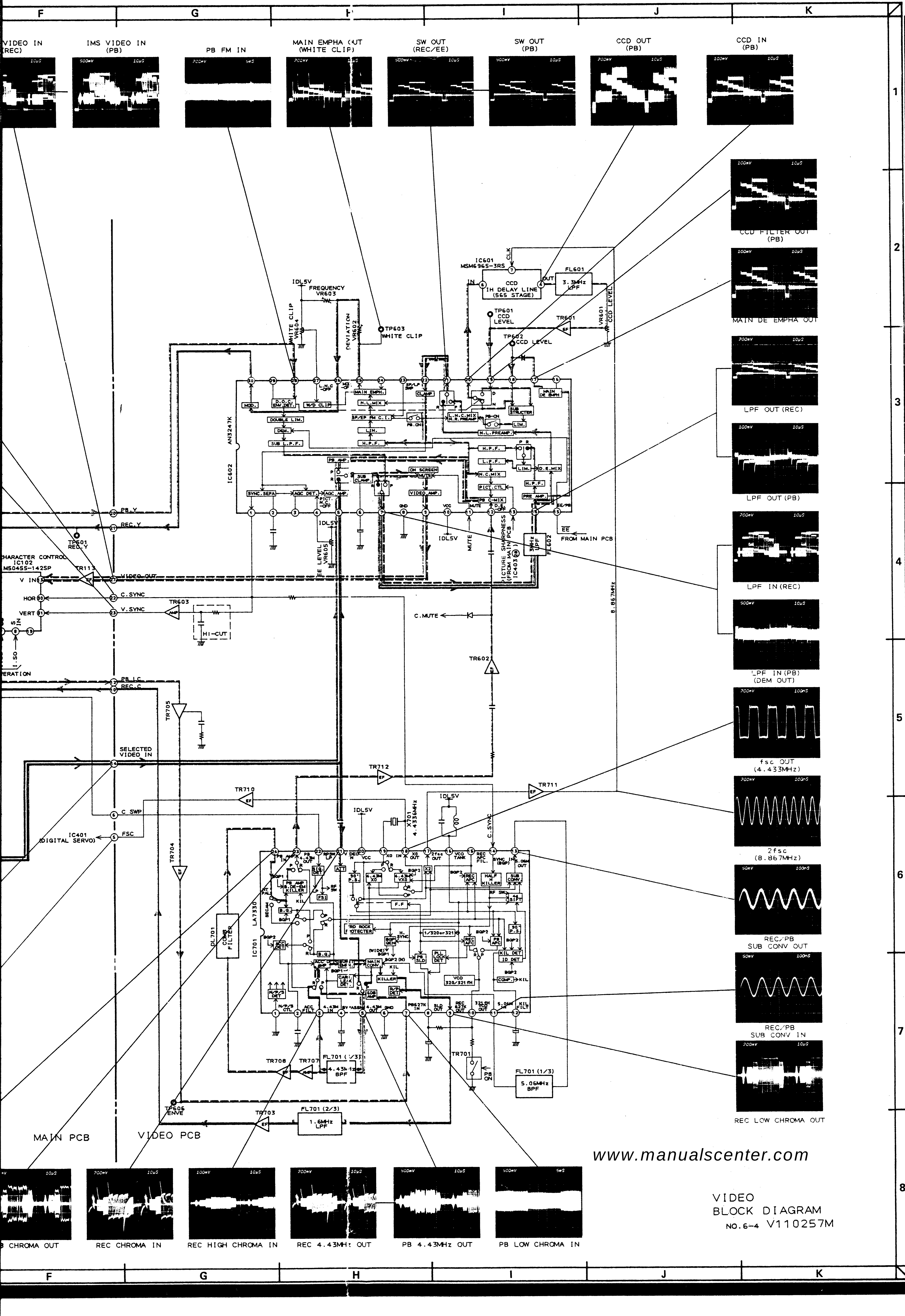
8
IMS V-SYNC IN
IMS C-SYNC IN (H-RATE)
IMS C-SYNC IN (V-RATE)
IMS
REC CHROMA IN
REC FM SIGNAL IN
REC SIGNAL OUT
PB VIDEO OUT
REC/EE VIDEO OUT
REC/EE VIDEO OUT (IMS ON)
SELECTED VIDEO IN
fsc IN (4.433MHz)
PB COMB FILTER OUT
IC1 BA7244BS
TR11
TR1
TR2
EF
AMP
AGC
AGC DET
PEAKING
CHROMA AMP
PB Vcc
PB5V
TR12
ENV DET
COMP
HEAD SW
HA.SW
PRE1
PRE2
PRE3
PRE4
REC Vcc
REC S.9V
VR2
REC Y
VR1
REC CHROMA
EQ
LP REC AMP
SP REC AMP
SWP
CH-1/CH-2
VIDEO HEAD
SP CH-2
SP CH-1
LP CH-2
P1
TP2 SWP
TP3 REC CURR
SP/LP ENVE COMP OUT
LP/SP HEAD SELECT
PRE AMP PCB
WP1
P203
GND
PB LC
SWP
REC C
PB Y
PB5V
REC Y
REC S.9V
ENVE DET
C SWP
ENVE SW
NC
NC
IDL5V
STILL.H
D5
D3
D8
TR10
INV
SERVO & SYSCON CIRCUIT
PICTURE SHARPNESS
IC602
VR101
CHARACTER POSITION
SCK
I.CLK
FROM OP MI-COM
TR101
VIDEO IN
ANT IN
RF OUT
RF CONVERTOR
RF IN
TV TUNER
VIF UNIT
IF IN
AUDIO OUT
VIDEO OUT
AUDIO IN
RF A IN
VIF A IN
EXT/INT
IC2 TC4066BP
CV OUT
VCR/EXT
TR15
TR103
IC7 TC4053BP
TR11, 12
LINEAR STEREO (A) PCB
REAR PIN JACK PCB
J1
J4
V. IN
V. OUT
EXT.V IN
VIDEO/AUDIO
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE


F
G
H
I
J
K
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8
VIDEO IN (REC)
IMS VIDEO IN (PB)
PB FM IN
MAIN EMPHA OUT (WHITE CLIP)
SW OUT (REC/EE)
SW OUT (PB)
CCD OUT (PB)
CCD IN (PB)
CCD FILTER OUT (PB)
MAIN DE EMPHA OUT
LPF OUT (REC)
LPF OUT (PB)
LPF IN (REC)
LPF IN (PB) (DEM OUT)
fsc OUT (4.433MHz)
2fsc (8.867MHz)
REC/PB SUB CONV OUT
REC/PB SUB CONV IN
REC LOW CHROMA OUT
PB CHROMA OUT
REC CHROMA IN
REC HIGH CHROMA IN
REC 4.43MHz OUT
PB 4.43MHz OUT
PB LOW CHROMA IN
IC601 MSM6965-3RS
CCD 1H DELAY LINE (565 STAGE)
FL601 3.3MHz LPF
TP601 CCD LEVEL
TP602 CCD LEVEL
TR601
VR601 CCD LEVEL
IDL5V
FREQUENCY VR603
WHITE CLIP VR604
DEVIATION VR602
TP603 WHITE CLIP
IC602 AN3247K
MOD.
D.O.C. ENV.DET.
L.N.C OFF
W/D CLIP
MAIN EMPH.
N.L.MIX
SP/LP SHP
CLAMP
DOUBLE LIM.
DEM.
SUB L.P.F.
SP/EP FM C.I.
LIN.
H.P.F.
L.N.C.MIX N.R.PREAMP
PB-ON
SUB STRUCTER
LIM.
MAIN DE EMPH
N.L.PREAMP.
L.P.F.
N.C.MIX
D.E.MIX
PICT.CTL
PB C-MIX
PRE AMP.
PB AMP.
SUB CLAMP
ON SCREEN MUTE
VIDEO AMP.
SYNC.SEPA
AGC DET.
AGC AMP.
PICT. N.C. OFF
GND
VCC
MUTE
D.E. OFF
EE/PB
EE FROM MAIN PCB
FL602 3MHz LPF
PICTURE SHARPNESS (FROM MAIN PCB IC403)
EE LEVEL VR605
8.867MHz
PB.Y
REC.Y
TP601 REC.Y
CHARACTER CONTROL IC102 MS0455-142SP
TR113
V IN
HOR
VERT
VIDEO OUT
C.SYNC
V.SYNC
TR603
HI-CUT
C.MUTE
TR602
OPERATION
PB.LC
REC.C
TR705
SELECTED VIDEO IN
TR712
TR711
TR710
C SWP
IC401 (DIGITAL SERVO)
FSC
TR704
X701 4.4336MHz
IDL5V
C.SYNC
IC701 LA7330
DL701 COMB FILTER
PB 4.43M IN
PB AMP B.DE-EM KILLER
SIG DET
RF SW
90° P.S
4.43M XO
4.43M VXO
2fsc OUT
VCO TANK
REC AFC FIL.
SYNC IN (BGP)
5.06M OUT
REC APC
HALF H KILLER
SUB CONV
4fsc SIFT
F.F
ID ROCK PROTECTER
1/320or321
BGP GEN
H.SYNC
REC AFC
PB APC
KIL DET
1D DET
ACC DET
B.G.
ACC AMP
SUB EMP
MAIN CONV.
PB SLD
PLL LOCK DET
VCO 320/321fH
COMP.
CABLE DET
KILLER
EDB AMP
R/P DET
N/P/S DET
N/P/S CTL
ACC FILT
4.43M IN
4.43M OUT
GND
PB627K IN
SLD OUT
REC 627K OUT
321fH OUT
5.06M IN
KIL FILT
TR708
TR707
FL701 (1/3) 4.43MHz BPF
TR701
PB ON
FL701 (1/3) 5.06MHz BPF
TP606 ENVE
TR703
FL701 (2/3) 1.6MHz LPF
MAIN PCB
VIDEO PCB

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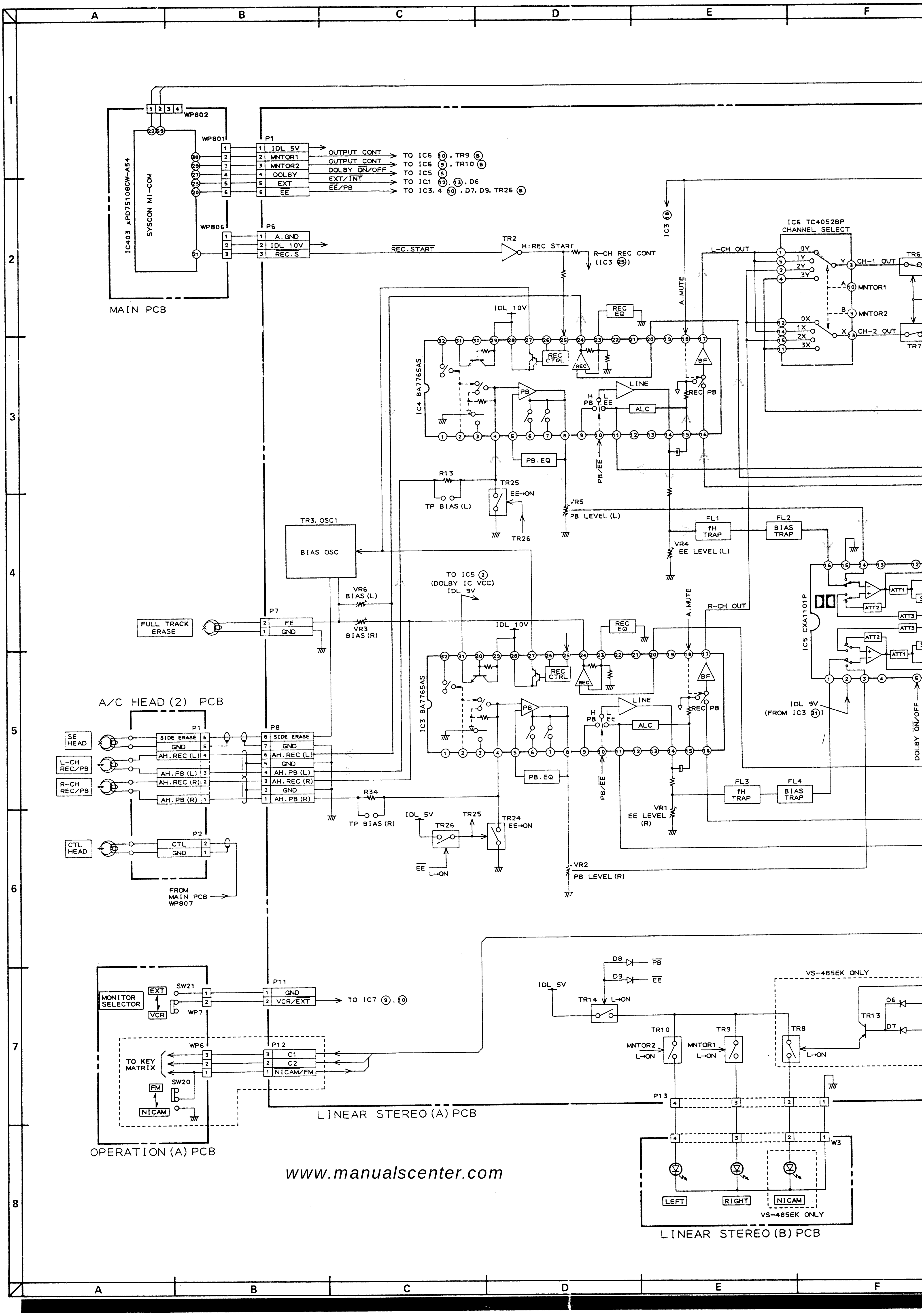
VIDEO
BLOCK DIAGRAM
NO.6-4 V110257M


A
B
C
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E
F
1
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3
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5
6
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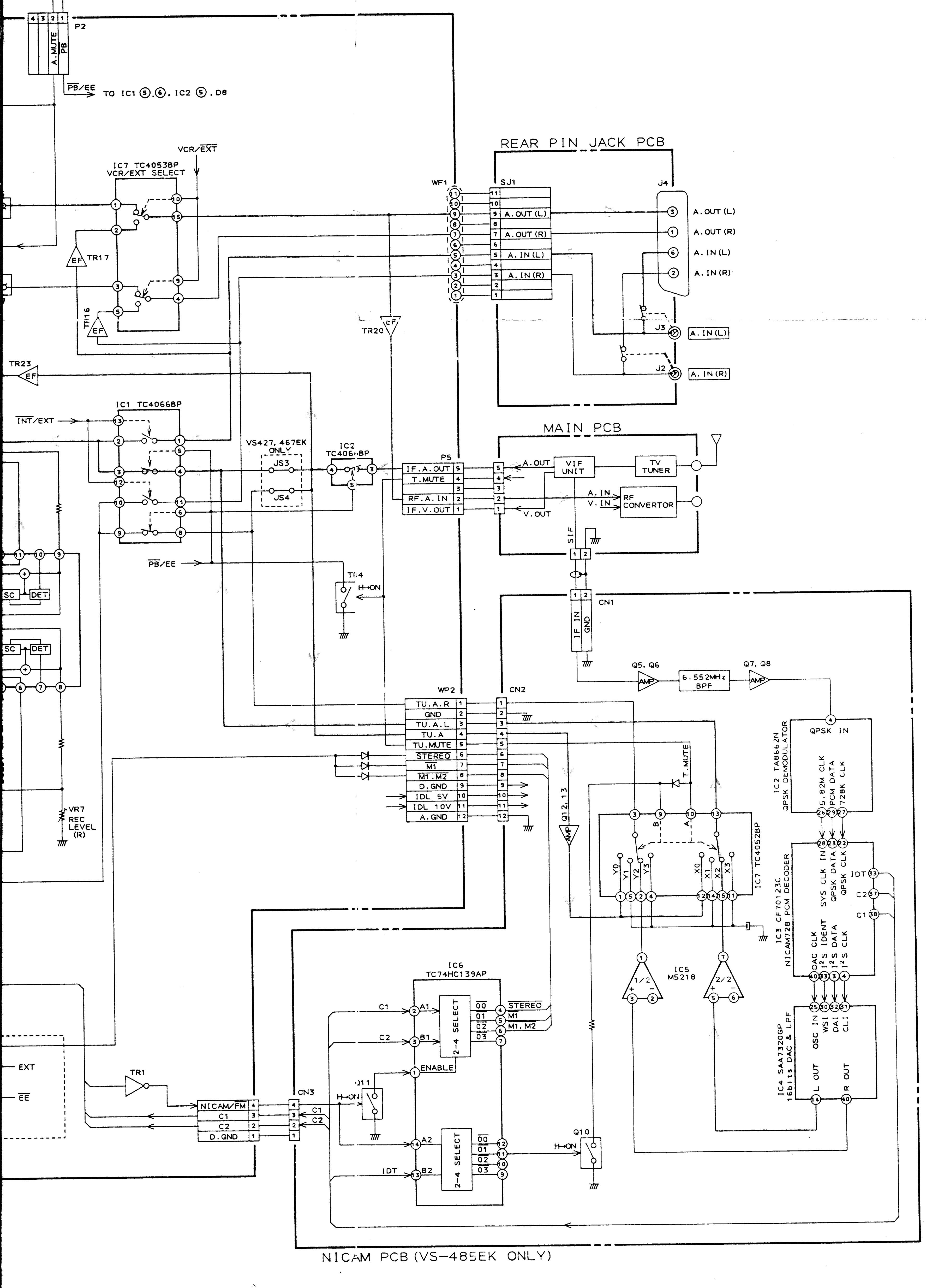
8
WP802
IC403 μPD75108CW-A54
SYSCON MI-COM
WP801
P1
IDL 5V
MNTOR1
MNTOR2
DOLBY
EXT
EE
OUTPUT CONT
OUTPUT CONT
DOLBY ON/OFF
EXT/INT
EE/PB
TO IC6 ⑩, TR9 ⑧
TO IC6 ⑨, TR10 ⑧
TO IC5 ⑤
TO IC1 ⑫, ⑬, D6
TO IC3, 4 ⑩, D7, D9, TR26 ⑧
WP806
P6
A.GND
IDL 10V
REC.S
REC.START
TR2
H:REC START
R-CH REC CONT
(IC3 ㉕)
MAIN PCB
IC3 ⑱
A.MUTE
L-CH OUT
IC6 TC4052BP
CHANNEL SELECT
0Y
1Y
2Y
3Y
CH-1 OUT
MNTOR1
MNTOR2
0X
1X
2X
3X
CH-2 OUT
TR6
TR7
IDL 10V
REC EQ
IC4 BA7765AS
REC CTRL
REC
BF
PB
LINE
H
PB
L
EE
ALC
REC
PB
PB.EQ
PB/EE
R13
TP BIAS (L)
TR25
EE→ON
TR26
VR5
PB LEVEL (L)
FL1
fH TRAP
FL2
BIAS TRAP
VR4
EE LEVEL (L)
TR3, OSC1
BIAS OSC
TO IC5 ②
(DOLBY IC VCC)
IDL 9V
VR6
BIAS (L)
VR3
BIAS (R)
P7
FE
GND
FULL TRACK ERASE
IDL 10V
REC EQ
A.MUTE
R-CH OUT
IC5 CXA1101P
ATT1
ATT2
ATT3
IC3 BA7765AS
REC CTRL
REC
BF
LINE
ALC
PB
PB.EQ
PB/EE
A/C HEAD (2) PCB
SE HEAD
L-CH REC/PB
R-CH REC/PB
P1
SIDE ERASE
GND
AH.REC (L)
AH.PB (L)
AH.REC (R)
AH.PB (R)
P8
SIDE ERASE
GND
AH.REC (L)
GND
AH.PB (L)
AH.REC (R)
GND
AH.PB (R)
R34
TP BIAS (R)
IDL 5V
TR26
TR25
TR24
EE→ON
EE
L→ON
FL3
fH TRAP
FL4
BIAS TRAP
VR1
EE LEVEL (R)
VR2
PB LEVEL (R)
IDL 9V
(FROM IC3 ㉛)
DOLBY ON/OFF
P2
CTL HEAD
CTL
GND
FROM MAIN PCB WP807
MONITOR SELECTOR
EXT
VCR
SW21
WP7
P11
GND
VCR/EXT
TO IC7 ⑨, ⑩
TO KEY MATRIX
WP6
P12
C1
C2
NICAM/FM
SW20
FM
NICAM
OPERATION (A) PCB
LINEAR STEREO (A) PCB
D8
PB
D9
EE
IDL 5V
TR14
L→ON
VS-485EK ONLY
D6
D7
TR13
TR10
MNTOR2
L→ON
TR9
MNTOR1
L→ON
TR8
L→ON
P13
W3
LEFT
RIGHT
NICAM
VS-485EK ONLY
LINEAR STEREO (B) PCB


P2
A. MUTE
PB
PB/EE
TO IC1 ⑤,⑥, IC2 ⑤, D8
VCR/EXT
IC7 TC4053BP
VCR/EXT SELECT
TR17
TR16
TR23
EF
REAR PIN JACK PCB
WF1
SJ1
J4
A. OUT (L)
A. OUT (R)
A. IN (L)
A. IN (R)
J3
J2
TR20
IC1 TC4066BP
INT/EXT
VS427, 467EK ONLY
JS3
JS4
IC2 TC4066BP
P5
IF. A. OUT
T. MUTE
RF. A. IN
IF. V. OUT
MAIN PCB
A. OUT
VIF UNIT
TV TUNER
A. IN
V. IN
RF CONVERTOR
V. OUT
SIF
CN1
IF IN
GND
TR4
H→ON
SC
DET
VR7 REC LEVEL (R)
Q5, Q6
AMP
6.552MHz BPF
Q7, Q8
WP2
CN2
TU. A. R
GND
TU. A. L
TU. A
TU. MUTE
STEREO
M1
M1. M2
D. GND
IDL 5V
IDL 10V
A. GND
T. MUTE
Q12, 13
IC7 TC4052BP
Y0 Y1 Y2 Y3
X0 X1 X2 X3
IC2 TA8662N
QPSK DEMODULATOR
QPSK IN
5.82M CLK
PCM DATA
728K CLK
IC3 CF70123C
NICAM728 PCM DECODER
SYS CLK IN
QPSK DATA
QPSK CLK
IDT
C2
C1
DAC CLK
I²S IDENT
I²S DATA
I²S CLK
IC5 M5218
1/2
2/2
IC4 SAA7320GP
16bits DAC & LPF
OSC IN
WSI
DAI
CLI
L OUT
R OUT
IC6 TC74HC139AP
C1
C2
A1
B1
ENABLE
2-4 SELECT
00 01 02 03
STEREO
M1
M1. M2
Q11
H→ON
A2
B2
IDT
Q10
H→ON
TR1
EXT
EE
NICAM/FM
C1
C2
D. GND
CN3
NICAM PCB (VS-485EK ONLY)

PB OR EE SIGNAL LINE
REC OR EE SIGNAL LINE
(INDICATED SIGNAL LINES ARE OF MODEL VS-485EK)

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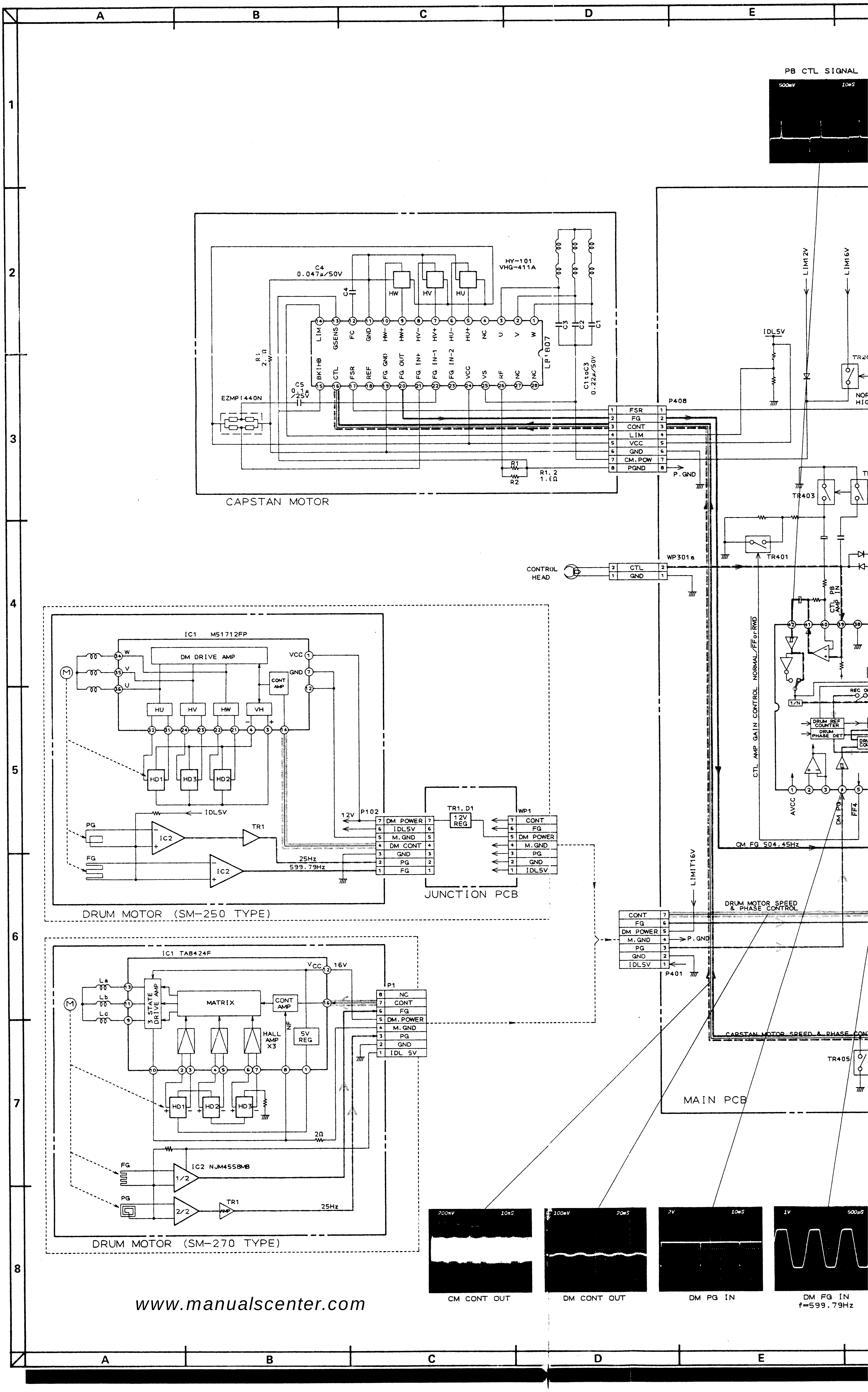
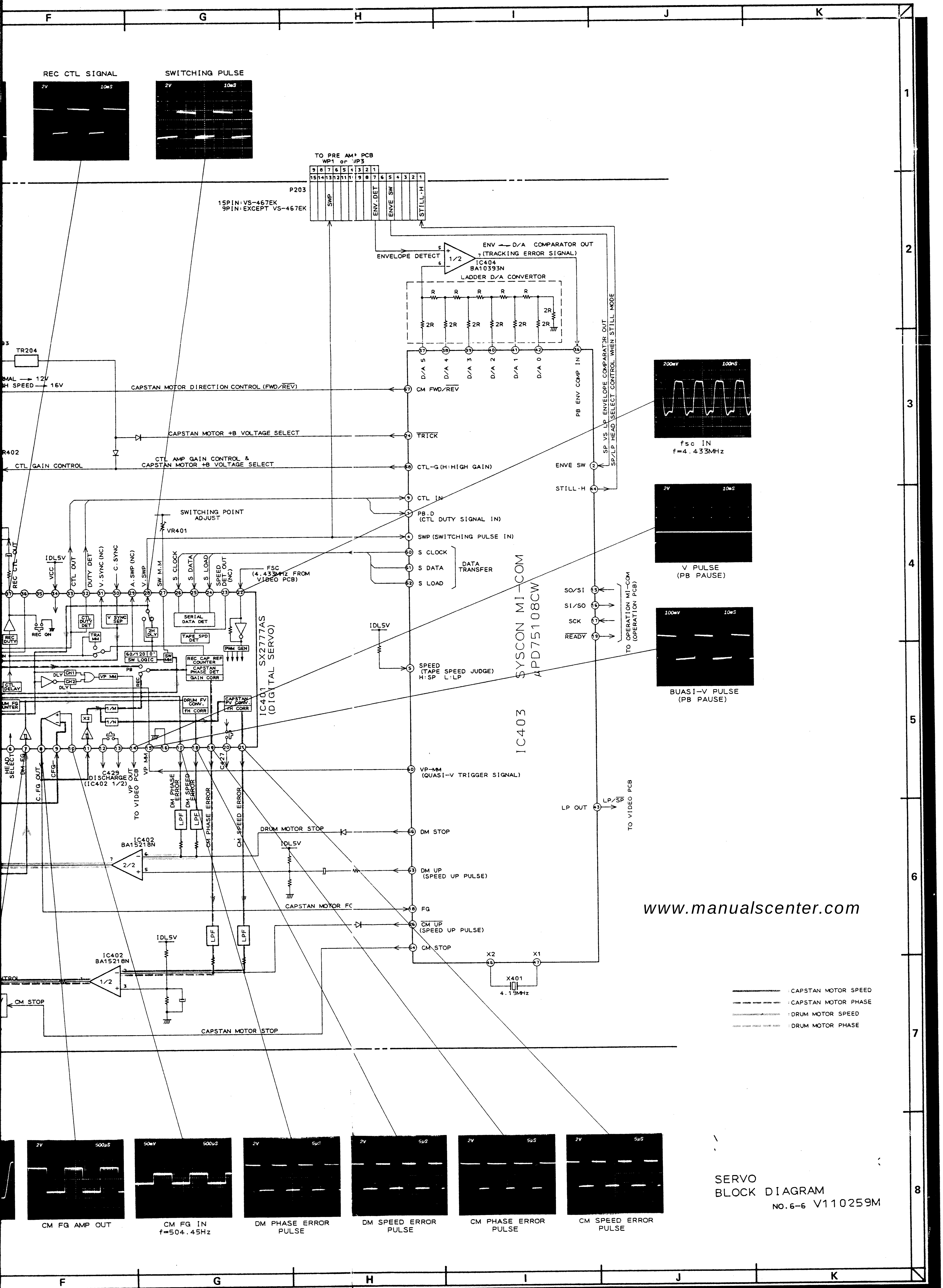
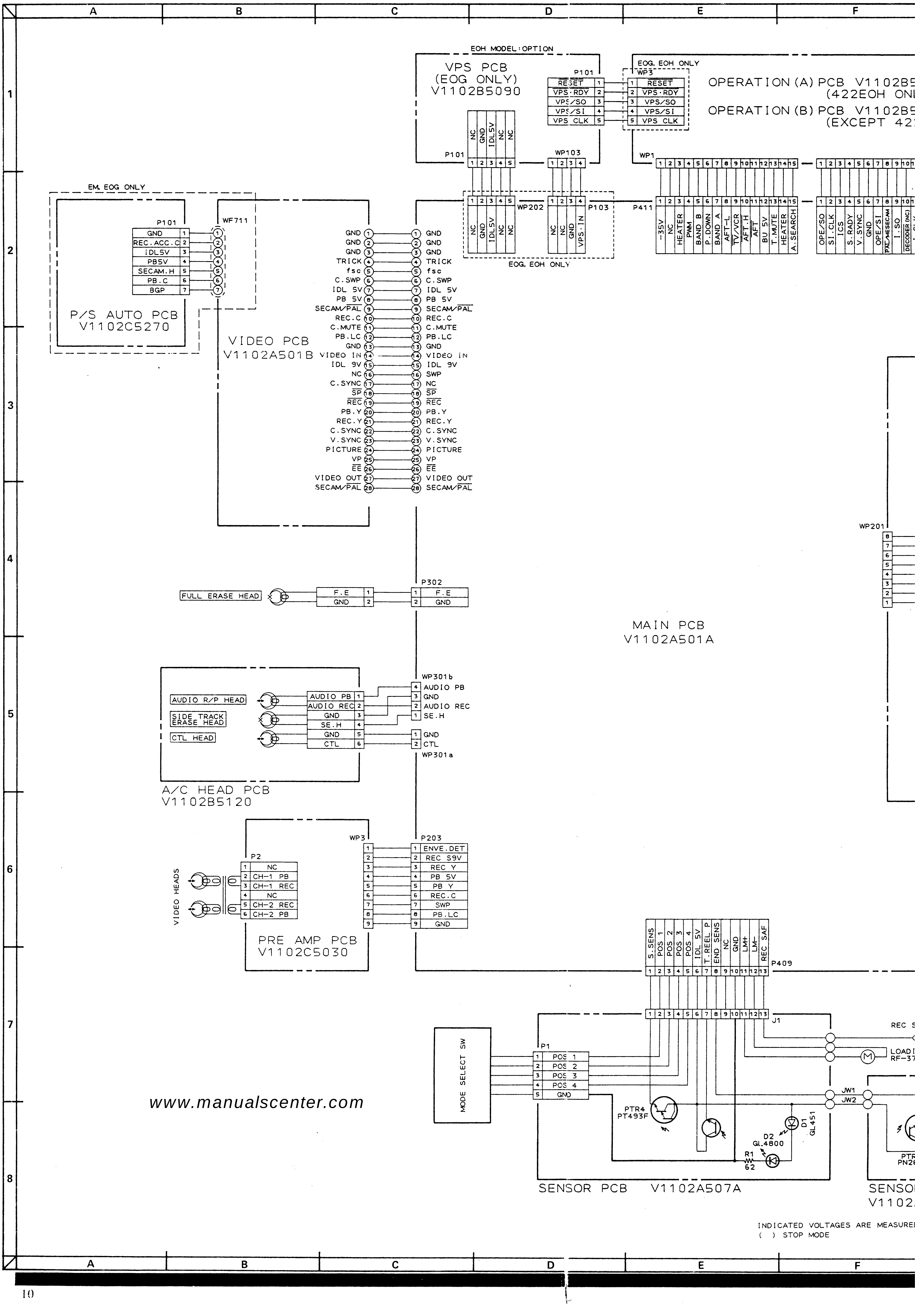
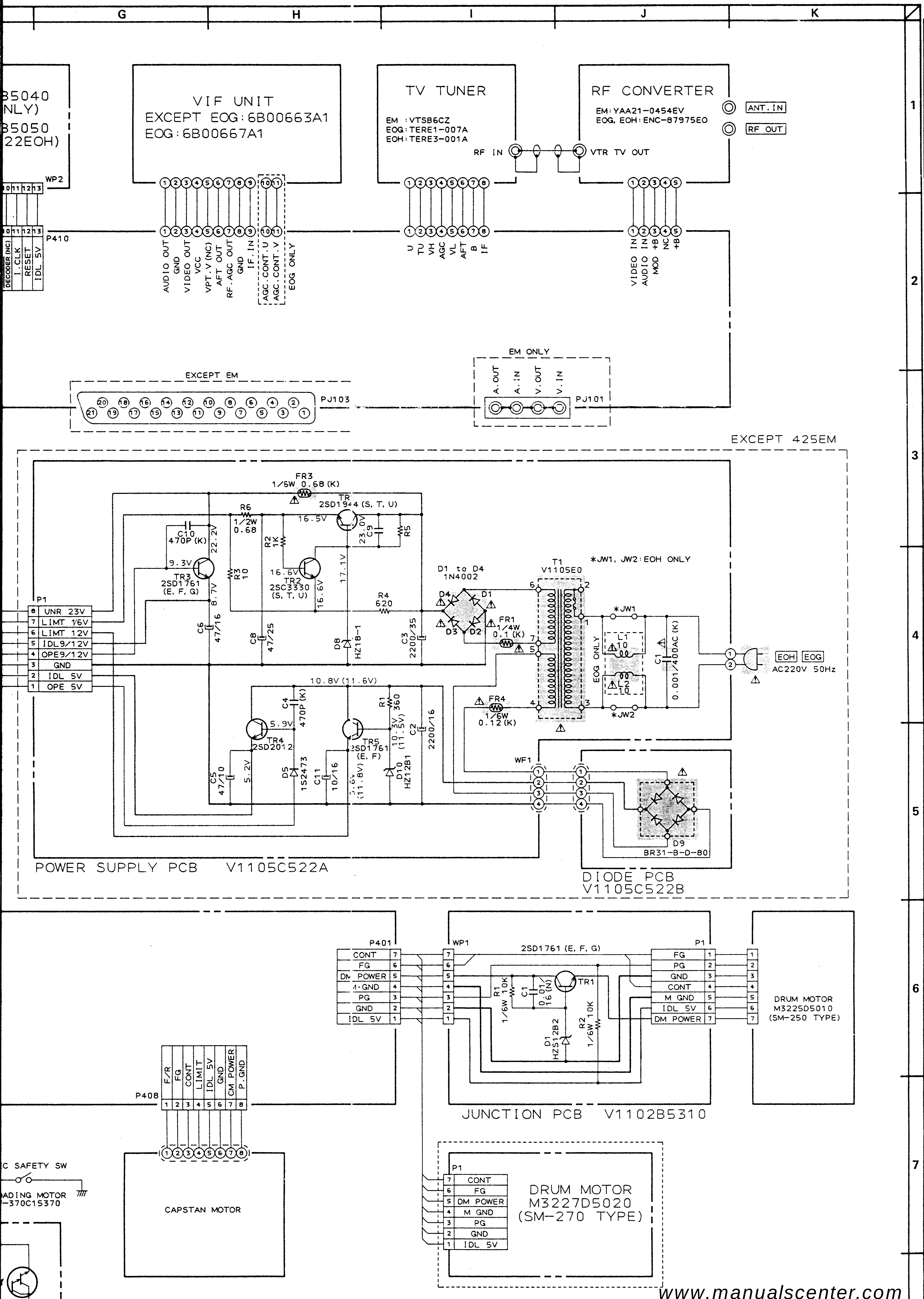
AUDIO
BLOCK DIAGRAM
NO.6-5 V110258M


A
B
C
D
E
1
2
3
4
5
6
7
8
PB CTL SIGNAL
CAPSTAN MOTOR
HY-101
VHG-411A
C4
0.047μ/50V
HW
HV
HU
LIM
GSENS
FC
GND
HW-
HW+
HV-
HV+
HU-
HU+
NC
U
V
W
BK(HB
CTL
FSR
REF
FG GND
FG OUT
FG IN+
FG IN-1
FG IN-2
VCC
VS
RF
NC
LA'607
C1 to C3
0.22μ/50V
R1
2.2Ω
C5
0.1μ
/25V
EZMP1440N
P408
FSR
FG
CONT
LIM
VCC
GND
CM.POW
PGND
R1
R2
R1, 2
1.0Ω
P.GND
LIM12V
LIM16V
IDL5V
TR403
TR401
WP301a
CONTROL
HEAD
CTL
GND
CTL AMP GAIN CONTROL NORMAL/FF or RWD
CTL AMP
PB IN
DRUM REF COUNTER
DRUM PHASE DET
REC
1/N
AVCC
DM PG
FF4
CM FG 504.45Hz
IC1 M51712FP
DM DRIVE AMP
VCC
GND
CONT AMP
HU
HV
HW
VH
HD1
HD3
HD2
IDL5V
PG
FG
IC2
TR1
12V
P102
DM POWER
IDL5V
M.GND
DM CONT
GND
PG
FG
25Hz
599.79Hz
TR1, D1
12V REG
WP1
CONT
FG
DM POWER
M.GND
PG
GND
IDL5V
JUNCTION PCB
DRUM MOTOR (SM-250 TYPE)
LIMIT16V
DRUM MOTOR SPEED & PHASE CONTROL
CONT
FG
DM POWER
M.GND
PG
GND
IDL5V
P.GND
P401
CAPSTAN MOTOR SPEED & PHASE CONT
TR405
MAIN PCB
IC1 TA8424F
VCC
16V
La
Lb
Lc
3 STATE DRIVE AMP
MATRIX
CONT AMP
HALL AMP X3
NF
5V REG
P1
NC
CONT
FG
DM. POWER
M.GND
PG
GND
IDL 5V
HD1
HD2
HD3
2Ω
IC2 NJM4558M8
1/2
2/2
TR1
AMP
25Hz
DRUM MOTOR (SM-270 TYPE)
CM CONT OUT
DM CONT OUT
DM PG IN
DM FG IN
f=599.79Hz


F
G
H
I
J
K
1
2
3
4
5
6
7
8
REC CTL SIGNAL
2V 10mS
SWITCHING PULSE
2V 10mS
TO PRE AMP PCB
WP1 or WP3
P203
15PIN:VS-467EK
9PIN:EXCEPT VS-467EK
SWP
ENV. DET
ENVE SW
STILL·H
ENV → D/A COMPARATOR OUT
(TRACKING ERROR SIGNAL)
ENVELOPE DETECT
1/2
IC404
BA10393N
LADDER D/A CONVERTOR
R
2R
D/A 5
D/A 4
D/A 3
D/A 2
D/A 1
D/A 0
PB ENV COMP IN
SP VS LP ENVELOPE COMPARATOR OUT
SP/LP HEAD SELECT CONTROL WHEN STILL MODE
TR204
NORMAL → 12V
HIGH SPEED → 16V
CAPSTAN MOTOR DIRECTION CONTROL (FWD/REV)
CM FWD/REV
CAPSTAN MOTOR +B VOLTAGE SELECT
TRICK
R402
CTL AMP GAIN CONTROL &
CAPSTAN MOTOR +B VOLTAGE SELECT
CTL GAIN CONTROL
CTL-G (H:HIGH GAIN)
ENVE SW
STILL·H
200mV 100nS
fsc IN
f=4.433MHz
CTL IN
PB.D
(CTL DUTY SIGNAL IN)
SWITCHING POINT
ADJUST
VR401
SWP (SWITCHING PULSE IN)
S CLOCK
S DATA
S LOAD
DATA
TRANSFER
2V 10mS
V PULSE
(PB PAUSE)
FSC
(4.433MHz FROM
VIDEO PCB)
IDL5V
REC CTL OUT
VCC
CTL OUT
DUTY DET
V. SYNC (NC)
C. SYNC
A. SWP (NC)
V. SWP
SW M.M
S CLOCK
S DATA
S LOAD
SPEED DET OUT (NC)
SO/SI
SI/SO
SCK
READY
TO OPERATION MI-COM
(OPERATION PCB)
REC DUTY
REC ON
CTL DUTY DET
V SYNC SEP
TRA MM
2H DLY
SERIAL DATA DET
TAPE SPD DET
PWM GEN
60/120
SW LOGIC
SW MM
REC CAP REF COUNTER
CAPSTAN PHASE DET
GAIN CORR
CTL DELAY
DLY
CH1
CH2
VP MM
PB
REC
DRUM FG COUNTER
DRUM FV CONV.
fH CORR
CAPSTAN FV CONV.
fH CORR
X2
1/M
1/N
IC401
SX2777AS
(DIGITAL SERVO)
IDL5V
SPEED
(TAPE SPEED JUDGE)
H:SP L:LP
SYSCON MI-COM
μPD75108CW
IC403
100mV 10mS
BUASI-V PULSE
(PB PAUSE)
HEAD SELECT
DM FG
C.FG OUT
CFG
C429
DISCHARGE
(IC402 1/2)
VP OUT
TO VIDEO PCB
VP MM
DM PHASE ERROR
DM SPEED ERROR
CM PHASE ERROR
CM SPEED ERROR
C427
VP-MM
(QUASI-V TRIGGER SIGNAL)
LP OUT
LP/SP
TO VIDEO PCB
LPF
IC402
BA15218N
2/2
DRUM MOTOR STOP
DM STOP
IDL5V
DM UP
(SPEED UP PULSE)
CAPSTAN MOTOR FG
FG
CM UP
(SPEED UP PULSE)
CM STOP
IDL5V
IC402
BA15218N
1/2
CM STOP
CAPSTAN MOTOR STOP
X2
X1
X401
4.19MHz
CAPSTAN MOTOR SPEED
CAPSTAN MOTOR PHASE
DRUM MOTOR SPEED
DRUM MOTOR PHASE
2V 500μS
CM FG AMP OUT
50mV 500μS
CM FG IN
f=504.45Hz
2V 5μS
DM PHASE ERROR
PULSE
2V 5μS
DM SPEED ERROR
PULSE
2V 5μS
CM PHASE ERROR
PULSE
2V 5μS
CM SPEED ERROR
PULSE

SERVO
BLOCK DIAGRAM
NO.6-6 V110259M


A
B
C
D
E
F
1
2
3
4
5
6
7
8
EOH MODEL:OPTION
VPS PCB
(EOG ONLY)
V1102B5090
P101
RESET 1
VPS·RDY 2
VPS/SO 3
VPS/SI 4
VPS CLK 5
NC
GND
IDL5V
NC
NC
P101
1 2 3 4 5
WP103
1 2 3 4
EOG, EOH ONLY
WP3
1 RESET
2 VPS·RDY
3 VPS/SO
4 VPS/SI
5 VPS CLK
OPERATION (A) PCB V1102B5
(422EOH ONL
OPERATION (B) PCB V1102B5
(EXCEPT 42
WP1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
P411
-35V
NC
HEATER
PWM
BAND B
P.DOWN
BAND A
AFT-L
TV/VCR
AFT.H
AFT
BU 5V
T.MUTE
HEATER
A.SEARCH
OPE/SO
SI.CLK
ICS
S.RADY
V.SYNC
GND
OPE/SI
PAL/MESECAM
I.SO
DECODER (NC)
WP202
P103
NC
GND
IDL5V
NC
NC
NC
NC
GND
VPS.IN
EOG, EOH ONLY
EM, EOG ONLY
P101
GND 1
REC.ACC.C 2
IDL5V 3
PB5V 4
SECAM.H 5
PB.C 6
BGP 7
WF711
P/S AUTO PCB
V1102C5270
VIDEO PCB
V1102A501B
GND ①
GND ②
GND ③
TRICK ④
fsc ⑤
C.SWP ⑥
IDL 5V ⑦
PB 5V ⑧
SECAM/PAL ⑨
REC.C ⑩
C.MUTE ⑪
PB.LC ⑫
GND ⑬
VIDEO IN ⑭
IDL 9V ⑮
NC ⑯
C.SYNC ⑰
SP ⑱
REC ⑲
PB.Y ⑳
REC.Y ㉑
C.SYNC ㉒
V.SYNC ㉓
PICTURE ㉔
VP ㉕
EE ㉖
VIDEO OUT ㉗
SECAM/PAL ㉘
① GND
② GND
③ GND
④ TRICK
⑤ fsc
⑥ C.SWP
⑦ IDL 5V
⑧ PB 5V
⑨ SECAM/PAL
⑩ REC.C
⑪ C.MUTE
⑫ PB.LC
⑬ GND
⑭ VIDEO IN
⑮ IDL 9V
⑯ SWP
⑰ NC
⑱ SP
⑲ REC
⑳ PB.Y
㉑ REC.Y
㉒ C.SYNC
㉓ V.SYNC
㉔ PICTURE
㉕ VP
㉖ EE
㉗ VIDEO OUT
㉘ SECAM/PAL
FULL ERASE HEAD
F.E 1
GND 2
P302
1 F.E
2 GND
MAIN PCB
V1102A501A
WP201
8 7 6 5 4 3 2 1
AUDIO R/P HEAD
SIDE TRACK ERASE HEAD
CTL HEAD
AUDIO PB 1
AUDIO REC 2
GND 3
SE.H 4
GND 5
CTL 6
WP301b
4 AUDIO PB
3 GND
2 AUDIO REC
1 SE.H
1 GND
2 CTL
WP301a
A/C HEAD PCB
V1102B5120
WP3
P203
1 ENVE.DET
2 REC S9V
3 REC Y
4 PB 5V
5 PB Y
6 REC.C
7 SWP
8 PB.LC
9 GND
P2
1 NC
2 CH-1 PB
3 CH-1 REC
4 NC
5 CH-2 REC
6 CH-2 PB
VIDEO HEADS
PRE AMP PCB
V1102C5030
S.SENS
POS 1
POS 2
POS 3
POS 4
IDL 5V
T.REEL P
END SENS
NC
GND
LM+
LM-
REC SAF
P409
1 2 3 4 5 6 7 8 9 10 11 12 13
J1
MODE SELECT SW
P1
1 POS 1
2 POS 2
3 POS 3
4 POS 4
5 GND
PTR4
PT493F
D2
GL4800
D1
GL451
R1
62
JW1
JW2
REC S
LOADI
RF-37
PTR
PN2
SENSOR PCB V1102A507A
SENSO
V1102
INDICATED VOLTAGES ARE MEASURED
( ) STOP MODE



G
H
I
J
K
1
2
3
4
5
6
7
8
35040
NLY)
35050
22EOH)
WP2
P410
DECODER (NC)
I.CLK
RESET
IDL 5V
VIF UNIT
EXCEPT EOG:6B00663A1
EOG:6B00667A1
AUDIO OUT
GND
VIDEO OUT
VCC
VPT.V (NC)
AFT OUT
RF.AGC OUT
GND
IF.IN
AGC.CONT.U
AGC.CONT.V
EOG ONLY
TV TUNER
EM :VTSB6CZ
EOG:TERE1-007A
EOH:TERE3-001A
RF IN
U
TU
VH
AGC
VL
AFT
B
IF
RF CONVERTER
EM:YAA21-0454EV
EOG, EOH:ENC-87975EO
ANT.IN
RF OUT
VTR TV OUT
VIDEO IN
AUDIO IN
MOD
NC
+B
+B
EM ONLY
A.OUT
A.IN
V.OUT
V.IN
PJ101
EXCEPT EM
PJ103
EXCEPT 425EM
FR3
1/6W 0.68 (K)
TR
2SD1944 (S, T, U)
R6
1/2W
0.68
16.5V
C10
470P (K)
22.2V
23.0V
C9
R5
R2
1K
R3
10
9.3V
TR3
2SD1761
(E, F, G)
16.6V
TR2
2SC3330
(S, T, U)
17.1V
16.6V
8.7V
R4
620
P1
8 UNR 23V
7 LIMT 16V
6 LIMT 12V
5 IDL9/12V
4 OPE9/12V
3 GND
2 IDL 5V
1 OPE 5V
C6
47/16
C8
47/25
D8
HZ18-1
C3
2200/35
D1 to D4
1N4002
D4
D1
D3
D2
FR1
1/4W
0.1 (K)
T1
V1105E0
*JW1, JW2:EOH ONLY
*JW1
*JW2
L1
10
L2
10
EOG ONLY
C1
0.001/400AC (K)
EOH
EOG
AC220V 50Hz
10.8V (11.6V)
C4
470P (K)
R1
360
5.9V
TR4
2SD2012
TR5
2SD1761
(E, F)
10.3V
(11.5V)
C2
2200/16
FR4
1/6W
0.12 (K)
C5
47/10
5.2V
D5
1S2473
C11
10/16
5.6V
(11.8V)
D10
HZ12B1
WF1
D9
BR31-B-D-80
POWER SUPPLY PCB V1105C522A
DIODE PCB
V1105C522B
P401
7 CONT
6 FG
5 DM POWER
4 M.GND
3 PG
2 GND
1 IDL 5V
WP1
2SD1761 (E, F, G)
R1
1/6W 10K
C1
0.01
16 (N)
TR1
R2
1/6W 10K
D1
HZS12B2
P1
FG 1
PG 2
GND 3
CONT 4
M GND 5
IDL 5V 6
DM POWER 7
DRUM MOTOR
M3225D5010
(SM-250 TYPE)
JUNCTION PCB V1102B5310
P408
F/R
FG
CONT
LIMIT
IDL 5V
GND
CM POWER
P.GND
CAPSTAN MOTOR
C SAFETY SW
ADING MOTOR
-370C15370
PTR1
PN268
P1
7 CONT
6 FG
5 DM POWER
4 M GND
3 PG
2 GND
1 IDL 5V
DRUM MOTOR
M3227D5020
(SM-270 TYPE)
SOR (S) PCB
02A507B
URED IN PB MODE

▬▬▬ :+B (POWER SUPPLY LINE)

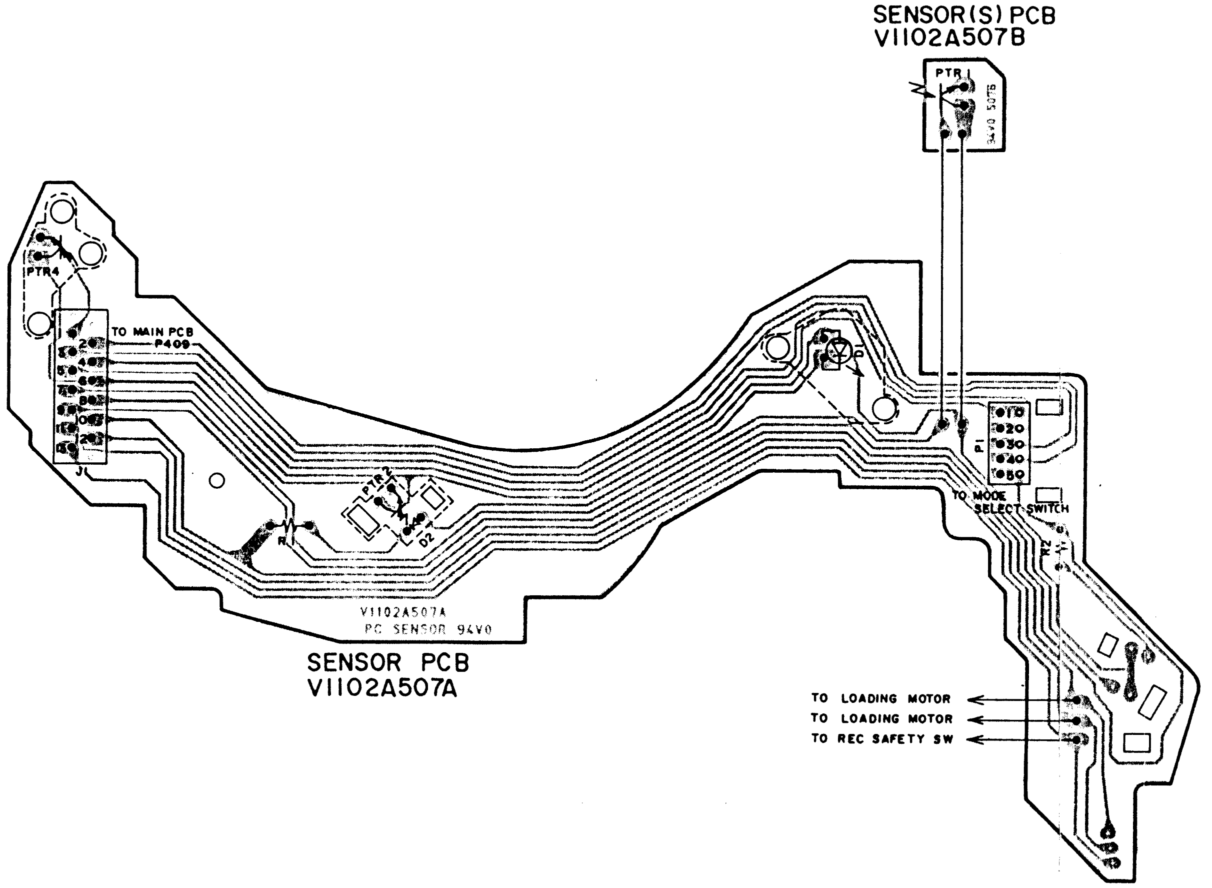
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50WV (M)

THESE MODES USED TWO
DIFFERENT TYPE OF DRUM
MOTOR (SM-250 OR SM-270).

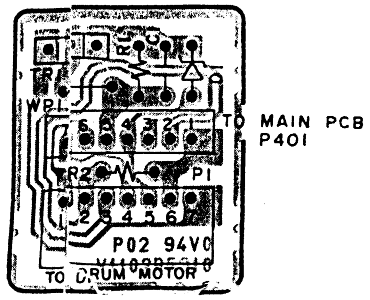
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨ , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

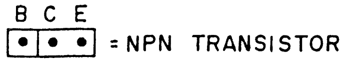
CONNECTION DIAGRAM
NO.22-1 V110215M


SENSOR(S) PCB
V1102A507B
PTR1
PTR4
TO MAIN PCB P409
J1
P1
TO MODE SELECT SWITCH
TO LOADING MOTOR
TO LOADING MOTOR
TO REC SAFETY SW
V1102A507A
PG SENSOR 94V0

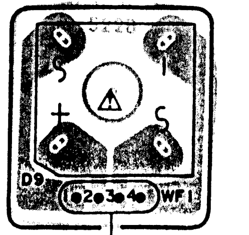
SENSOR PCB
V1102A507A


WP1
TO MAIN PCB P401
R2
P1
P02 94V0
TO DRUM MOTOR

JUNCTION PCB
V1102B5310J1


B C E
= NPN TRANSISTOR

DIODE PCB
V1105C522BJ3



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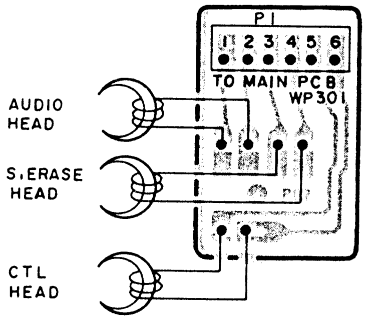
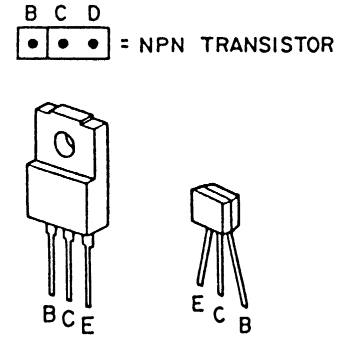

P1
1 2 3 4 5 6
TO MAIN PCB
WP301
AUDIO HEAD
S.ERASE HEAD
CTL HEAD

A/C HEAD PCB
V1102B5120J1

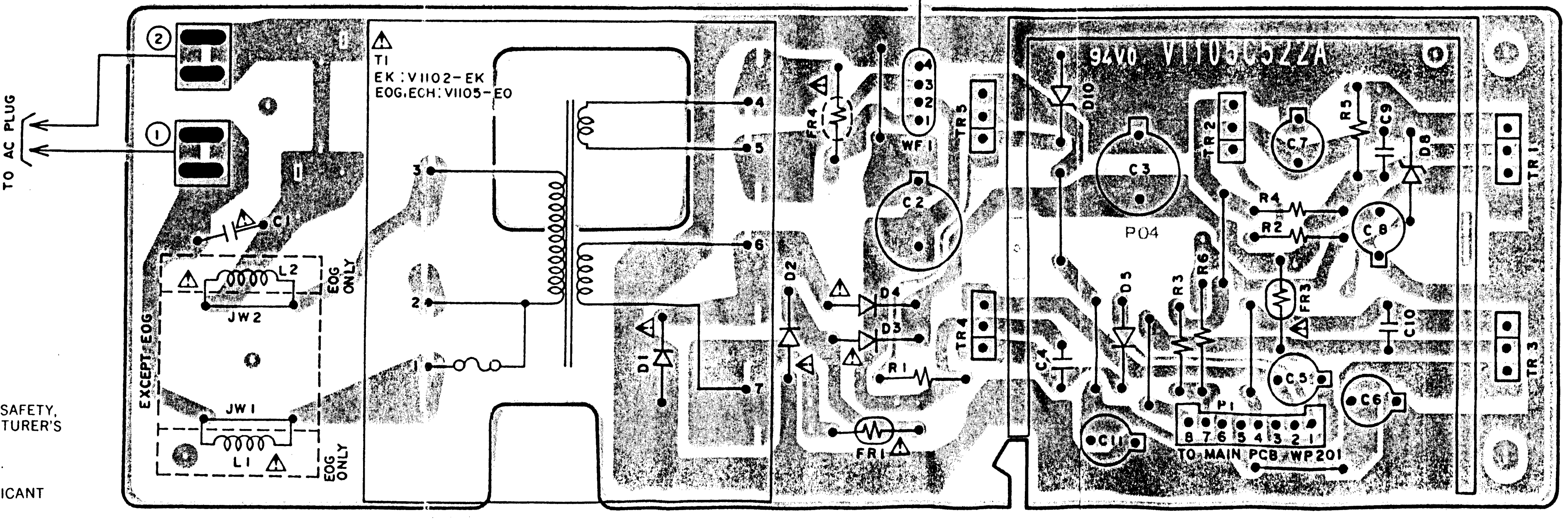

B C D
= NPN TRANSISTOR
B C E
E C B

2SD1761
2SD1944

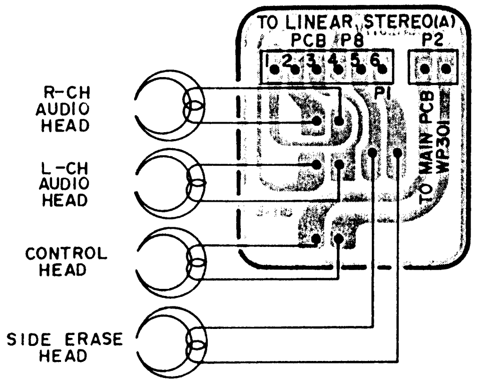
2SC3330

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

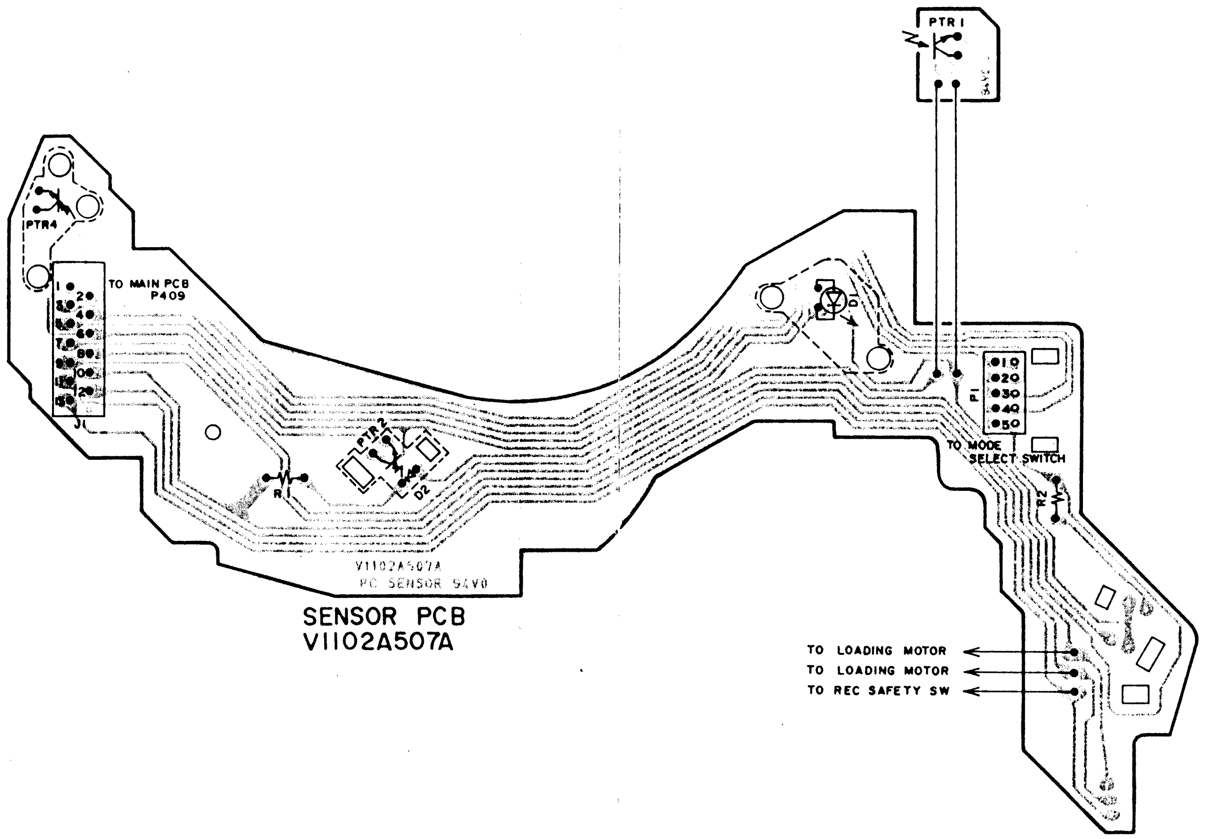

TO AC PLUG
①
②
T1
EK: V1102-EK
EOG,ECH: V1105-EO
C1
L2
JW2
JW1
L1
EXCEPT EOG
EOG ONLY
EOG ONLY
FR4
WF1
TR5
C2
D2
D4
D3
D1
R1
FR1
TR4
C4
94V0 V1105C522A
D10
C3
P04
TR2
C7
R5
C9
D8
R4
R2
C8
TR1
D5
R3
R6
FR3
C10
TR3
C5
C6
C11
P1
8 7 6 5 4 3 2 1
TO MAIN PCB WP201

V H POWER PCB V1105C522AJ3

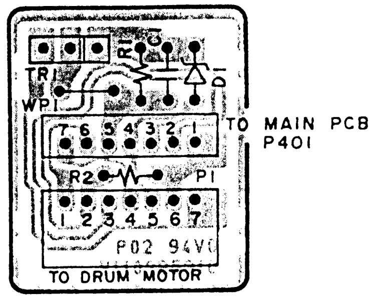

TO LINEAR STEREO(A)
PCB P8
P2
1 2 3 4 5 6
P1
TO MAIN PCB
WP301
R-CH AUDIO HEAD
L-CH AUDIO HEAD
CONTROL HEAD
SIDE ERASE HEAD

A/C HEAD(2) PCB
V1102D5300

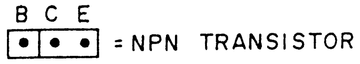
SENSOR(S) PCB
V1102A507B

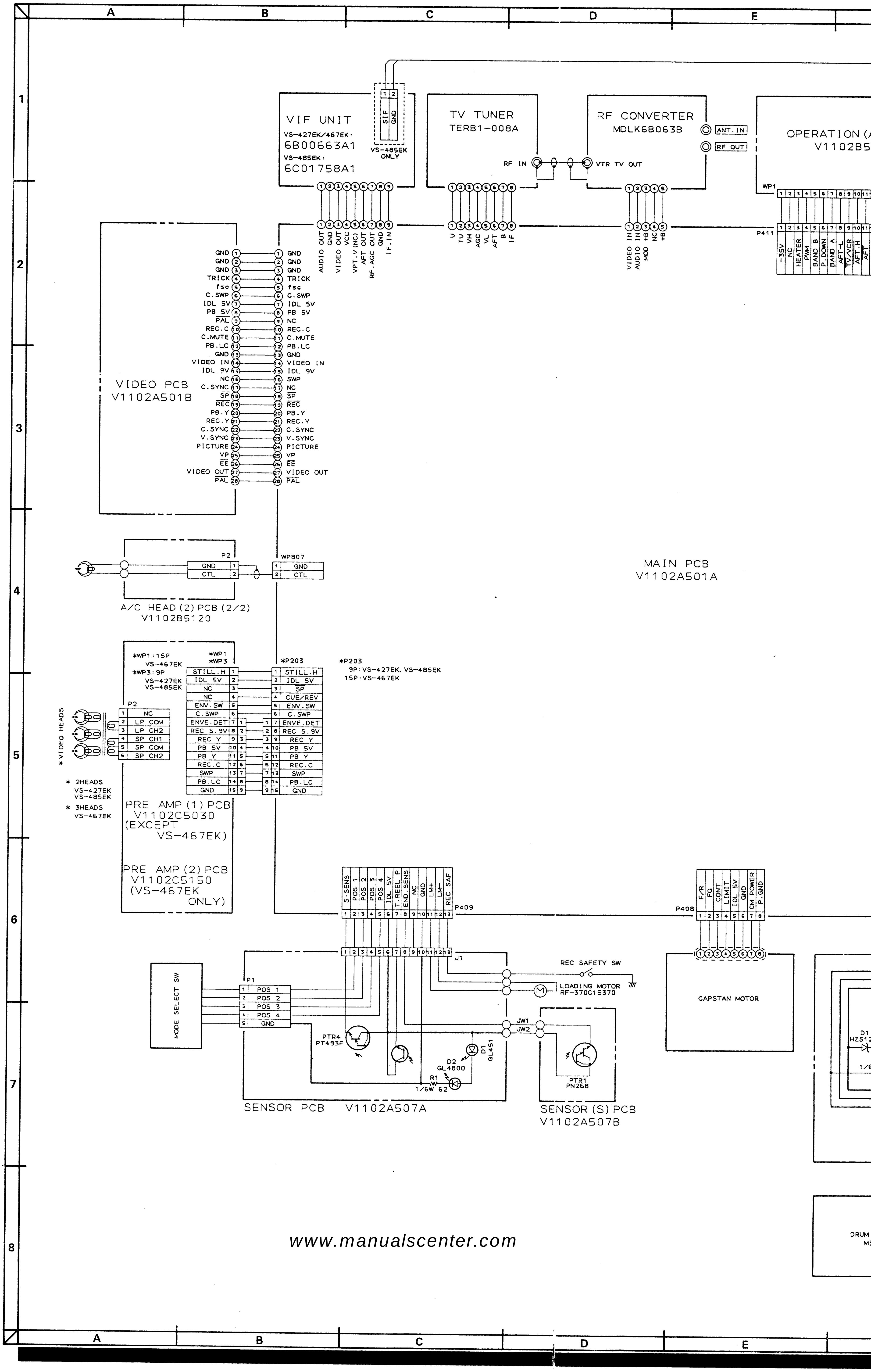

PTR1
PTR4
J1
TO MAIN PCB
P409
1 2 3 4 5 6 7 8 9 10 11 12
R1
PTR3
D2
D1
P1
1 2 3 4 5
TO MODE SELECT SWITCH
R2
V1102A507A
PC SENSOR 94V0
TO LOADING MOTOR
TO LOADING MOTOR
TO REC SAFETY SW

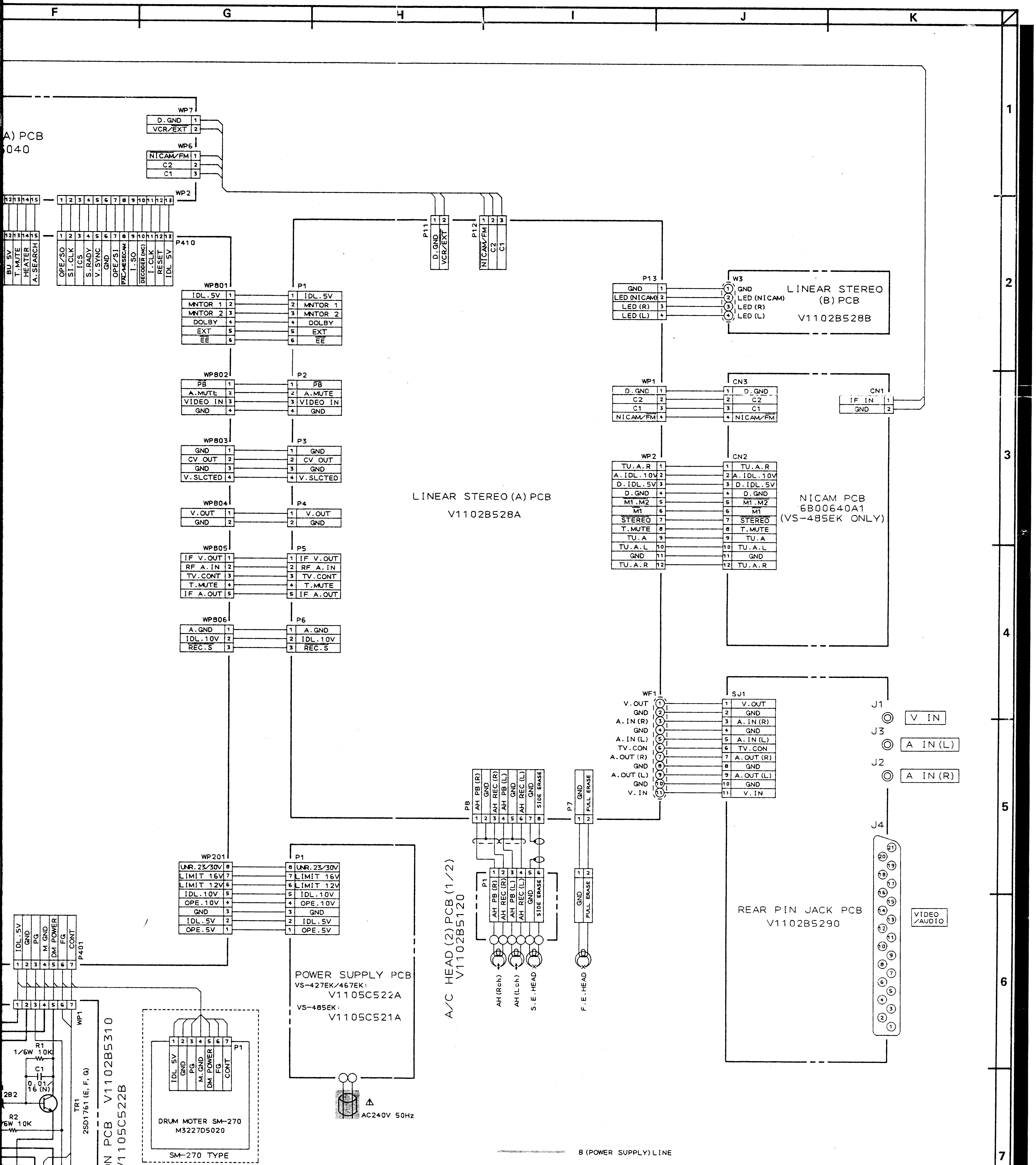
SENSOR PCB
V1102A507A


TR1
WP1
R1
C
D
7 6 5 4 3 2 1
TO MAIN PCB
P401
R2
P1
1 2 3 4 5 6 7
P02 94V0
TO DRUM MOTOR

JUNCTION PCB
V1102B5310J1


B C E
= NPN TRANSISTOR


A
B
C
D
E
1
2
3
4
5
6
7
8
VIF UNIT
VS-427EK/467EK:
6B00663A1
VS-485EK:
6C01758A1
SIF
GND
VS-485EK ONLY
TV TUNER
TERB1-008A
RF IN
RF CONVERTER
MDLK6B063B
ANT. IN
RF OUT
VTR TV OUT
OPERATION (A
V1102B5
WP1
P411
AUDIO OUT
GND
VIDEO OUT
VCC
VPT.V(NC)
AFT OUT
RF.AGC
GND
IF.IN
U
TU
VH
AGC
VL
AFT
B
IF
VIDEO IN
AUDIO IN
MOD
NC
+B
-35V
NC
HEATER
PWM
BAND B
P.DOWN
BAND A
AFT-L
TV/VCR
AFT.H
AFT
VIDEO PCB
V1102A501B
GND
GND
GND
TRICK
fsc
C.SWP
IDL 5V
PB 5V
PAL
NC
REC.C
C.MUTE
PB.LC
GND
VIDEO IN
IDL 9V
NC
SWP
C.SYNC
SP
REC
PB.Y
REC.Y
C.SYNC
V.SYNC
PICTURE
VP
EE
VIDEO OUT
PAL
MAIN PCB
V1102A501A
P2
GND
CTL
WP807
A/C HEAD (2) PCB (2/2)
V1102B5120
*WP1: 15P
VS-467EK
*WP3: 9P
VS-427EK
VS-485EK
*WP1
*WP3
*P203
*P203
9P: VS-427EK, VS-485EK
15P: VS-467EK
STILL.H
IDL 5V
NC
SP
CUE/REV
ENV.SW
C.SWP
ENVE.DET
REC S.9V
REC Y
PB 5V
PB Y
REC.C
SWP
PB.LC
GND
*VIDEO HEADS
NC
LP COM
LP CH2
SP CH1
SP COM
SP CH2
* 2HEADS
VS-427EK
VS-485EK
* 3HEADS
VS-467EK
PRE AMP (1) PCB
V1102C5030
(EXCEPT
VS-467EK)
PRE AMP (2) PCB
V1102C5150
(VS-467EK
ONLY)
S.SENS
POS 1
POS 2
POS 3
POS 4
IDL 5V
T.REEL P
END.SENS
NC
GND
LM+
LM-
REC SAF
P409
J1
F/R
FG
CONT
LIMIT
IDL 5V
GND
CM POWER
P.GND
P408
CAPSTAN MOTOR
MODE SELECT SW
P1
POS 1
POS 2
POS 3
POS 4
GND
REC SAFETY SW
LOADING MOTOR
RF-370C15370
M
JW1
JW2
PTR4
PT493F
D2
GL4800
D1
GL451
R1
1/6W 62
PTR1
PN268
SENSOR PCB V1102A507A
SENSOR (S) PCB
V1102A507B
D1
HZS1
1/6
DRUM
M3

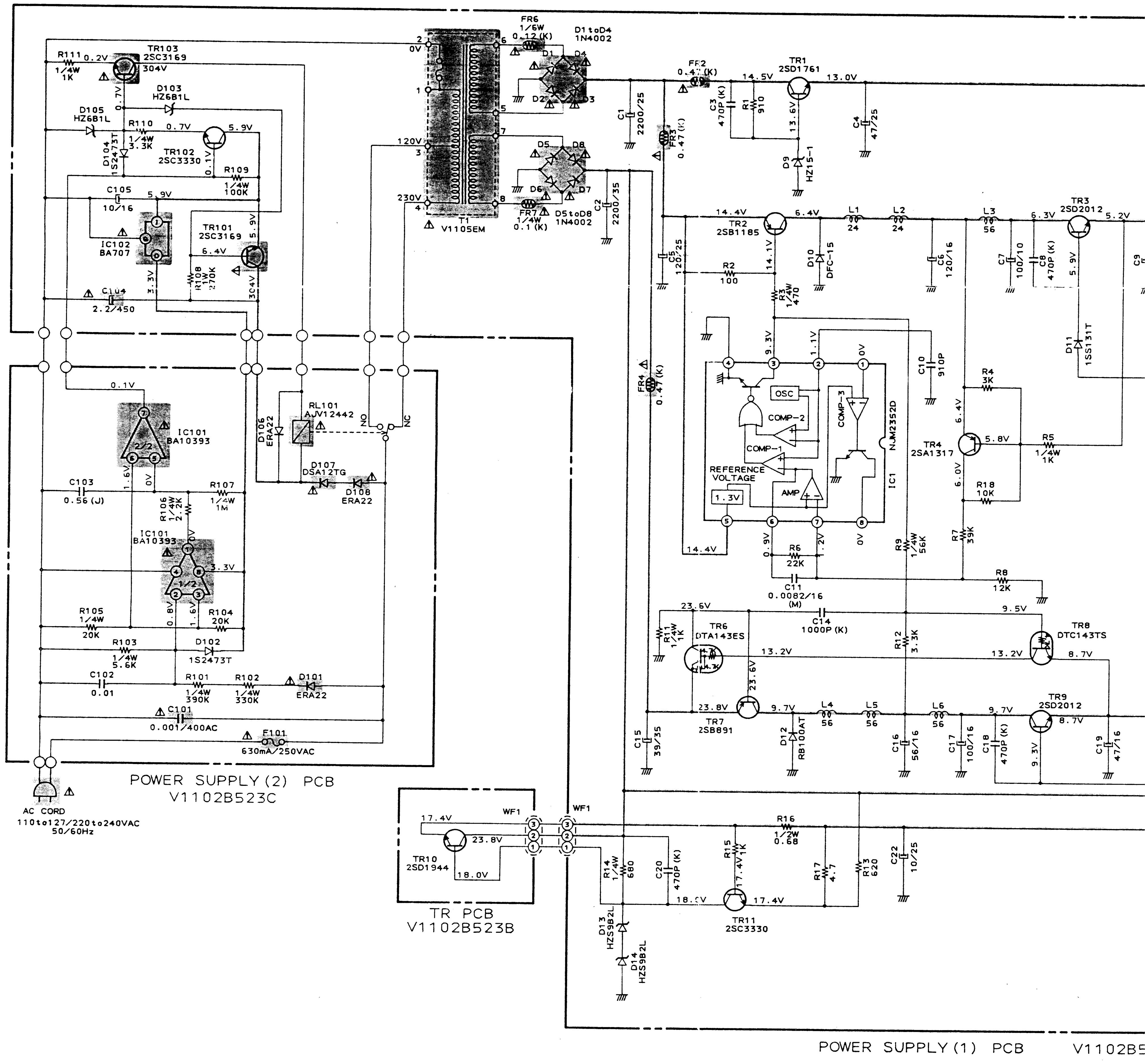

F
G
H
I
J
K
1
2
3
4
5
6
7
8
A) PCB
040
WP7
D.GND 1
VCR/EXT 2
WP6
NICAM/FM 1
C2 2
C1 3
WP2
P410
BU.5V
T.MUTE
HEATER
A.SEARCH
OPE/SO
SI.CLK
ICS
S.RADY
V.SYNC
GND
OPE/SI
PAL/MESECAM
I.SO
DECODER(NC)
I.CLK
RESET
IDL.5V
P11
D.GND
VCR/EXT
P12
NICAM/FM
C2
C1
WP801
P1
IDL.5V
MNTOR 1
MNTOR 2
DOLBY
EXT
EE
WP802
P2
PB
A.MUTE
VIDEO IN
GND
WP803
P3
GND
CV OUT
GND
V.SLCTED
WP804
P4
V.OUT
GND
WP805
P5
IF V.OUT
RF A.IN
TV.CONT
T.MUTE
IF A.OUT
WP806
P6
A.GND
IDL.10V
REC.S
LINEAR STEREO (A) PCB
V1102B528A
P13
W3
GND
LED (NICAM)
LED (R)
LED (L)
LINEAR STEREO
(B) PCB
V1102B528B
WP1
CN3
D.GND
C2
C1
NICAM/FM
CN1
IF IN
GND
WP2
CN2
TU.A.R
A.IDL.10V
D.IDL.5V
D.GND
M1.M2
M1
STEREO
T.MUTE
TU.A
TU.A.L
GND
TU.A.R
NICAM PCB
6B00640A1
(VS-485EK ONLY)
WF1
SJ1
V.OUT
GND
A.IN(R)
GND
A.IN(L)
TV.CON
A.OUT(R)
GND
A.OUT(L)
GND
V.IN
J1
V IN
J3
A IN(L)
J2
A IN(R)
J4
REAR PIN JACK PCB
V1102B5290
VIDEO /AUDIO
P8
AH PB(R)
GND
AH REC(R)
AH PB(L)
GND
AH REC(L)
GND
SIDE ERASE
P7
GND
FULL ERASE
A/C HEAD (2) PCB (1/2)
V1102B5120
AH (Rch)
AH (Lch)
S.E.HEAD
F.E.HEAD
WP201
UNR.23/30V
LIMIT 16V
LIMIT 12V
IDL.10V
OPE.10V
GND
IDL.5V
OPE.5V
POWER SUPPLY PCB
VS-427EK/467EK:
V1105C522A
VS-485EK:
V1105C521A
AC240V 50Hz
P401
IDL.5V
GND
PG
M.GND
DM POWER
FG
CONT
WP1
R1
1/6W 10K
C1
0.01/16(N)
TR1
2SD1761(E,F,G)
R2
6W 10K
2B2
JUNCTION PCB V1102B5310
V1105C522B
DRUM MOTER SM-270
M3227D5020
SM-270 TYPE
DM POWER
IDL 5V
M GND
CONT
GND
PG
FG
M MOTOR SM-250
M3225D5010
B (POWER SUPPLY) LINE

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LE FABRICANT

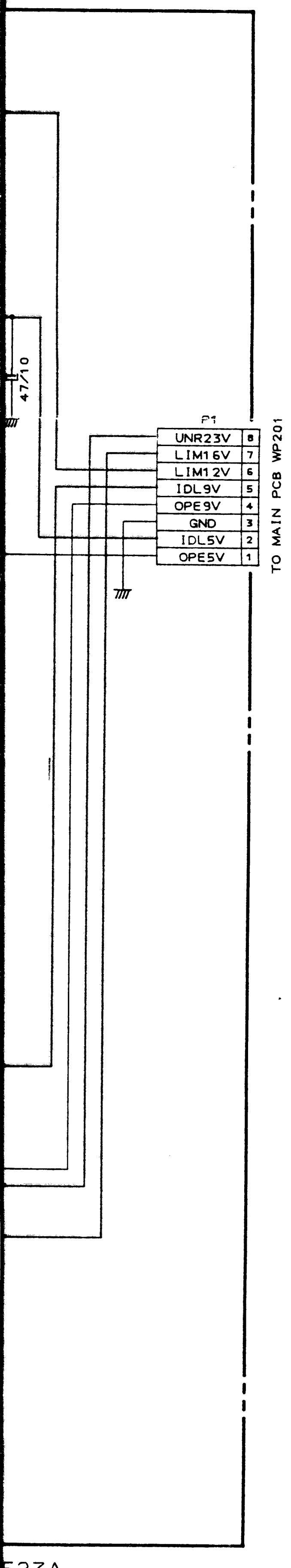
CONNECTION DIAGRAM
NO. 22-2 V110216M

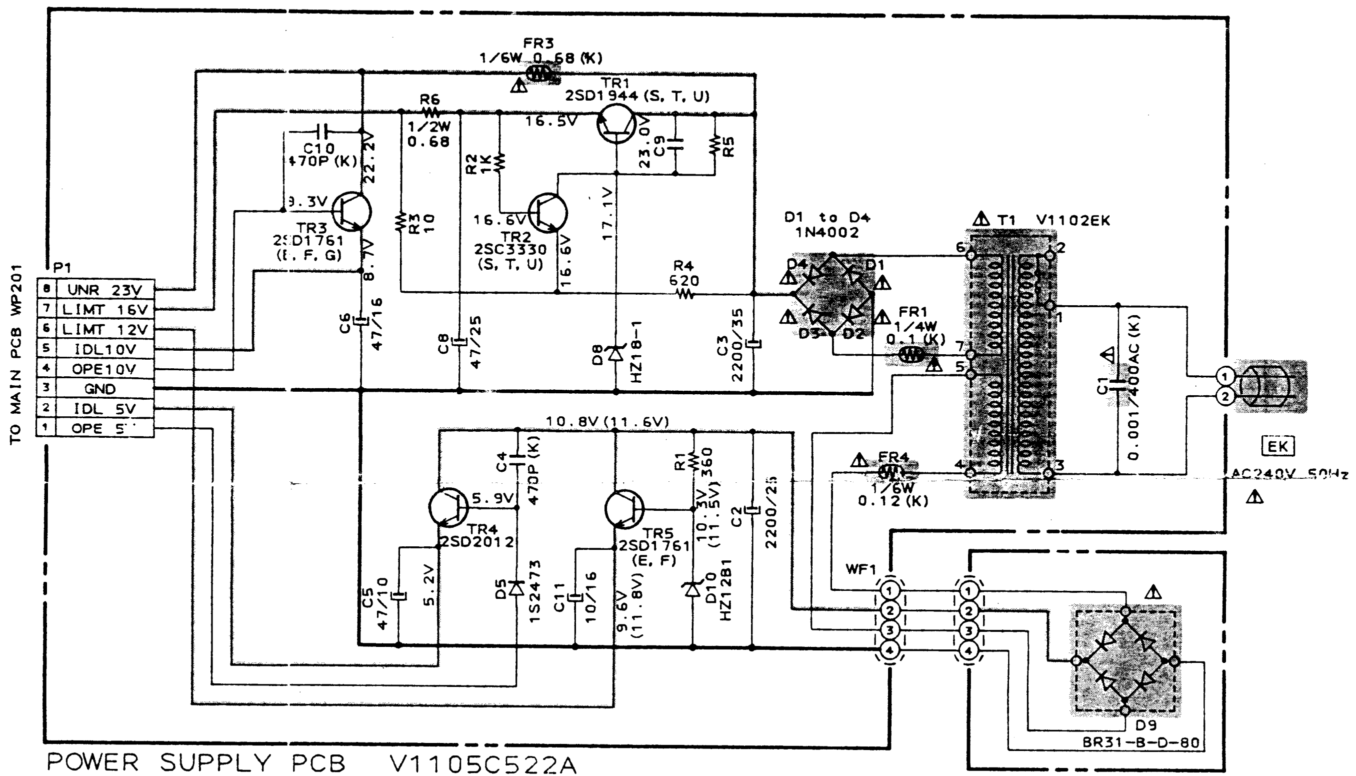
F G H I J K


POWER SUPPLY (2) PCB
V1102B523C
TR PCB
V1102B523B
POWER SUPPLY (1) PCB
V1102B5
AC CORD
110to127/220to240VAC
50/60Hz
T1
V1105EM
0V
120V
230V
FR6
1/6W
0.12 (K)
D1toD4
1N4002
D5toD8
1N4002
FR7
1/4W
0.1 (K)
FR2
0.47 (K)
FR3
0.47 (K)
FR4
0.47 (K)
C1
2200/25
C2
2200/35
TR1
2SD1761
13.0V
14.5V
13.6V
C3
470P (K)
R1
910
C4
47/25
D9
HZ15-1
TR2
2SB1185
14.4V
6.4V
14.1V
C5
120/25
R2
100
R3
1/4W
470
D10
DFC-15
L1
24
L2
24
C6
120/16
L3
56
6.3V
C7
100/10
C8
470P (K)
TR3
2SD2012
5.2V
5.9V
D11
1SS131T
R4
3K
TR4
2SA1317
5.8V
R5
1/4W
1K
R18
10K
R7
39K
R8
12K
IC1
NJM2352D
OSC
COMP-1
COMP-2
COMP-3
REFERENCE
VOLTAGE
1.3V
AMP
9.3V
1.1V
0.9V
1.2V
R6
22K
C10
910P
C11
0.0082/16
(M)
R9
1/4W
56K
23.6V
R11
1/4W
1K
TR6
DTA143ES
C14
1000P (K)
9.5V
R12
3.3K
TR8
DTC143TS
13.2V
8.7V
23.8V
TR7
2SB891
9.7V
L4
56
L5
56
L6
56
TR9
2SD2012
C15
39/35
D12
RB100AT
C16
56/16
C17
100/16
C18
470P (K)
C19
47/16
WF1
17.4V
TR10
2SD1944
18.0V
R16
1/2W
0.68
R14
1/4W
680
C20
470P (K)
R15
1K
R17
4.7
R13
620
C22
10/25
TR11
2SC3330
D13
HZS9B2L
D14
HZS9B2L
R111
1/4W
1K
0.2V
TR103
2SC3169
304V
D103
HZ6B1L
D105
HZ6B1L
R110
1/4W
3.3K
0.7V
TR102
2SC3330
D104
1S2473T
R109
1/4W
100K
C105
10/16
IC102
BA707
TR101
2SC3169
R108
1W
270K
C104
2.2/450
IC101
BA10393
RL101
AJV12442
NO
NC
D106
ERA22
D107
DSA12TG
D108
ERA22
C103
0.56 (J)
R107
1/4W
1M
R106
1/4W
2.2K
R105
1/4W
20K
R104
20K
R103
1/4W
5.6K
D102
1S2473T
C102
0.01
R101
1/4W
390K
R102
1/4W
330K
D101
ERA22
C101
0.001/400AC
F101
630mA/250VAC
A
B
C
D
E
F
1
2
3
4
5
6
7
8

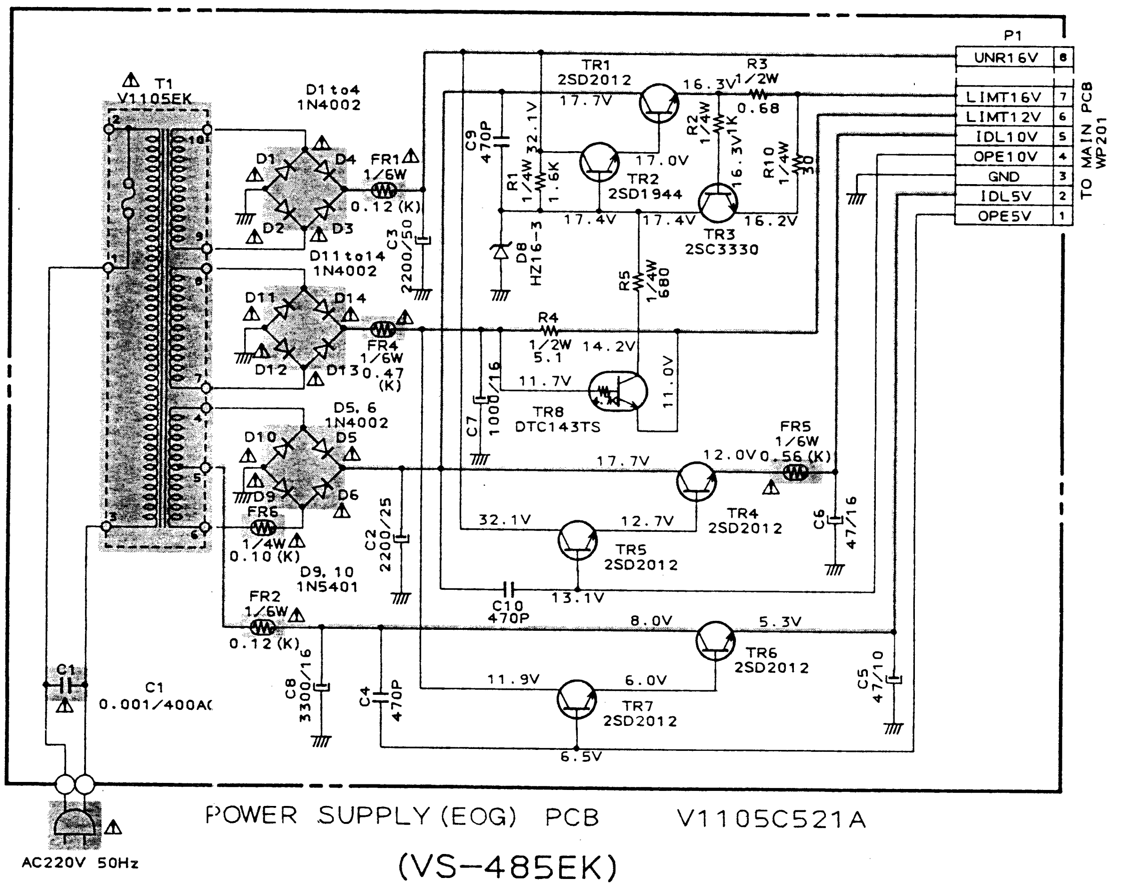
(VS−425EM)

INDICATED VOLTAGES ARE MEASURED IN PB MODE.
(CONNECTED DC VOLTMETER'S NEGATIVE INPUT TO T1 ② PIN WHEN MEASURED PRIMARY SECTION)


P1
UNR23V
LIM16V
LIM12V
IDL9V
OPE9V
GND
IDL5V
OPE5V
TO MAIN PCB WP201
47/10
523A


TO MAIN PCB WP201
P1
UNR 23V
LIMT 16V
LIMT 12V
IDL10V
OPE10V
GND
IDL 5V
OPE 5V
FR3 1/6W 0.68 (K)
TR1 2SD1944 (S, T, U)
R6 1/2W 0.68
C10 470P (K)
TR3 2SD1761 (E, F, G)
TR2 2SC3330 (S, T, U)
R4 620
D1 to D4 1N4002
T1 V1102EK
FR1 1/4W 0.1 (K)
C1 0.001/400AC (K)
EK
AC240V 50Hz
FR4 1/6W 0.12 (K)
WF1
TR4 2SD2012
TR5 2SD1761 (E, F)
C2 2200/25
D10 HZ12B1
D8 HZ18-1
D5 1S2473
D9 BR31-B-D-80
POWER SUPPLY PCB V1105C522A
DIODE PCB V1105C522B

(VS-427EK, 467EK)


T1 V1105EK
D1 to 4 1N4002
FR1 1/6W 0.12 (K)
D11 to 14 1N4002
FR4 1/6W 0.47 (K)
D5, 6 1N4002
FR6 1/4W 0.10 (K)
D9, 10 1N5401
FR2 1/6W 0.12 (K)
C1 0.001/400AC
TR1 2SD2012
TR2 2SD1944
TR3 2SC3330
R3 1/2W 0.68
D8 HZ16-3
R5 1/4W 680
R4 1/2W 5.1
TR8 DTC143TS
FR5 1/6W 0.56 (K)
TR4 2SD2012
TR5 2SD2012
TR6 2SD2012
TR7 2SD2012
C10 470P
P1
UNR16V
LIMT16V
LIMT12V
IDL10V
OPE10V
GND
IDL5V
OPE5V
TO MAIN PCB WP201
AC220V 50Hz

POWER SUPPLY (EOG) PCB V1105C521A

(VS-485EK)

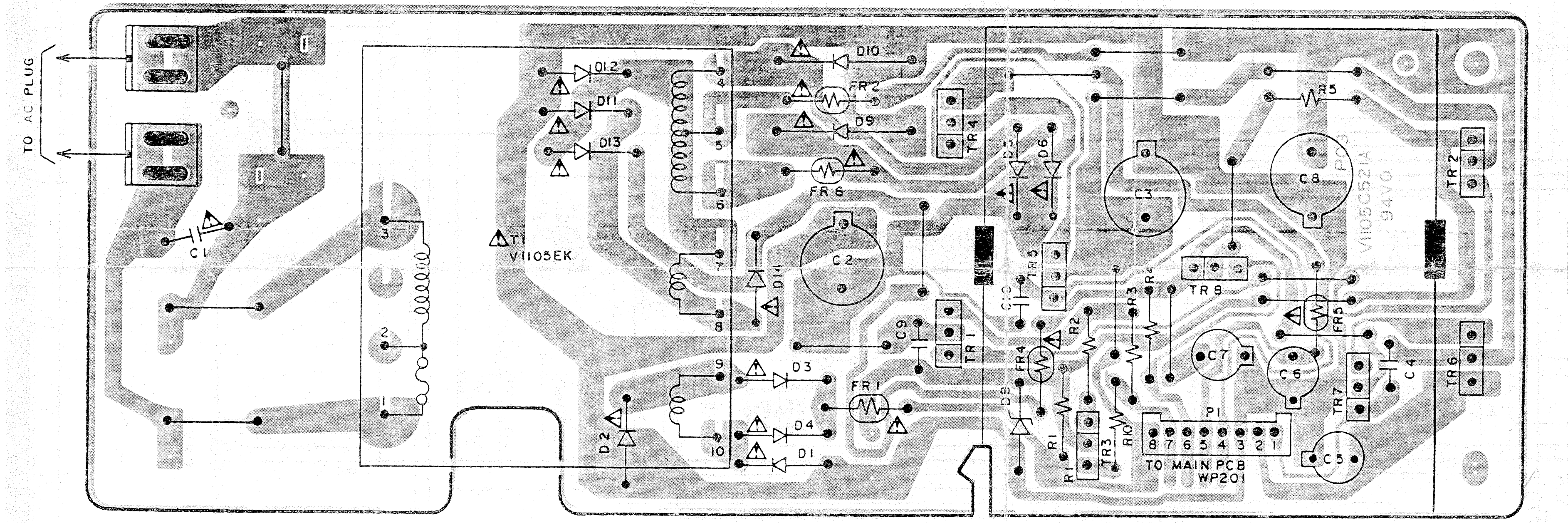
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L' APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LE FABRICANT

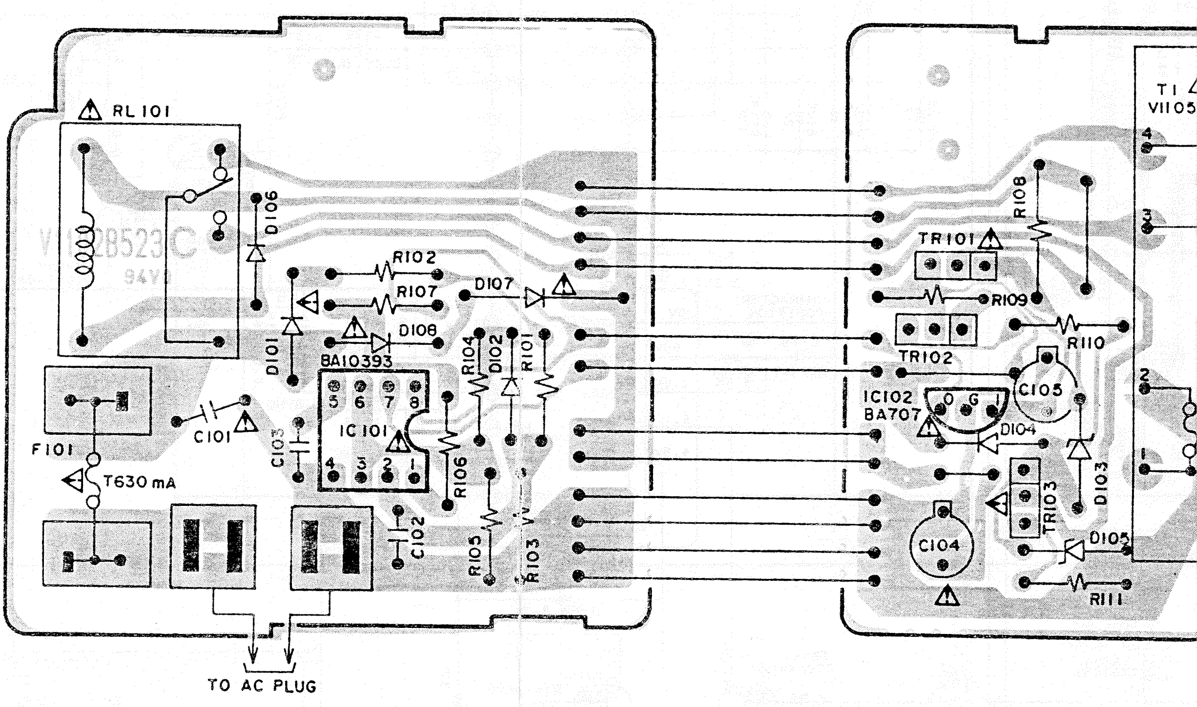
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN µF 50 WV (M)
ALL INDUCTORS IN µH (K)

▨ B (POWER SUPPLY) LINE

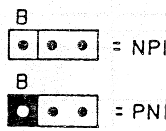
POWER SUPPLY
SCHEMATIC DIAGRAM
NO.22-3 V110217M

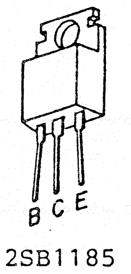

TO AC PLUG
C1
T1
V1105EK
D12
D11
D13
D10
FR2
D9
FR6
D14
C2
D3
FR1
D4
D1
D2
TR4
D5
D6
C3
TR5
C10
C9
TR1
FR4
R2
R3
R4
TR8
R5
C8
V1105C521A
94V0
TR2
FR5
C7
C6
C4
TR7
TR6
R1
TR3
P1
8 7 6 5 4 3 2 1
TO MAIN PCB
WP201
C5

POWER SUPPLY (EOG) PCB V1105C521AJ2

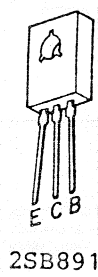

RL101
V1102B523C
94V0
D106
R102
R107
D107
D108
D101
BA10393
R104
D102
R101
5 6 7 8
IC101
4 3 2 1
C101
C103
R106
C102
R105
R103
F101
T630 mA
TO AC PLUG
T1
V1105
R108
TR101
R109
R110
TR102
IC102
BA707
C105
D104
TR103
D103
D105
C104
R111

POWER SUPPLY (2) PCB V1102B523C (J1)



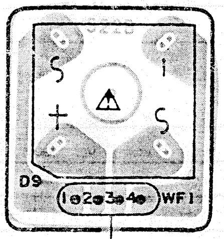


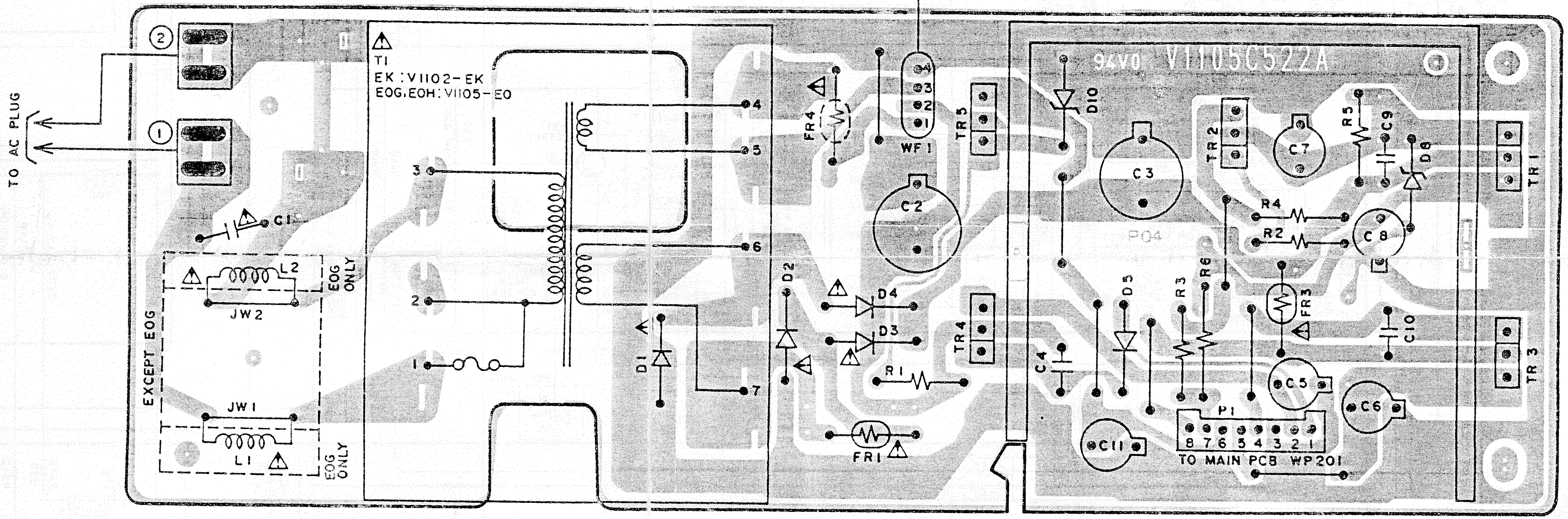
2SB1185



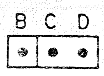
2SB891

DIODE PCB
V1105C522BJ3




TO AC PLUG
②
①
T1
EK : V1102-EK
EOG, EOH : V1105-EO
C1
L2
EOG ONLY
JW2
EXCEPT EOG
JW1
L1
EOG ONLY
4
5
3
6
2
1
7
FR4
WF1
TR5
C2
D2
D1
D4
D3
R1
FR1
TR4
94V0 V1105C522A
D10
C3
TR2
C7
R5
C9
D8
TR1
R4
R2
C8
P04
D5
R6
R3
FR3
C4
C10
C5
TR3
C6
C11
P1
8 7 6 5 4 3 2 1
TO MAIN PCB WP201

(VS-427EK, 467EK) POWER PCB V1105C522AJ3



= NPN TRANSISTOR

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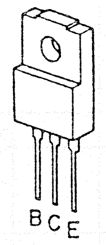
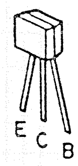
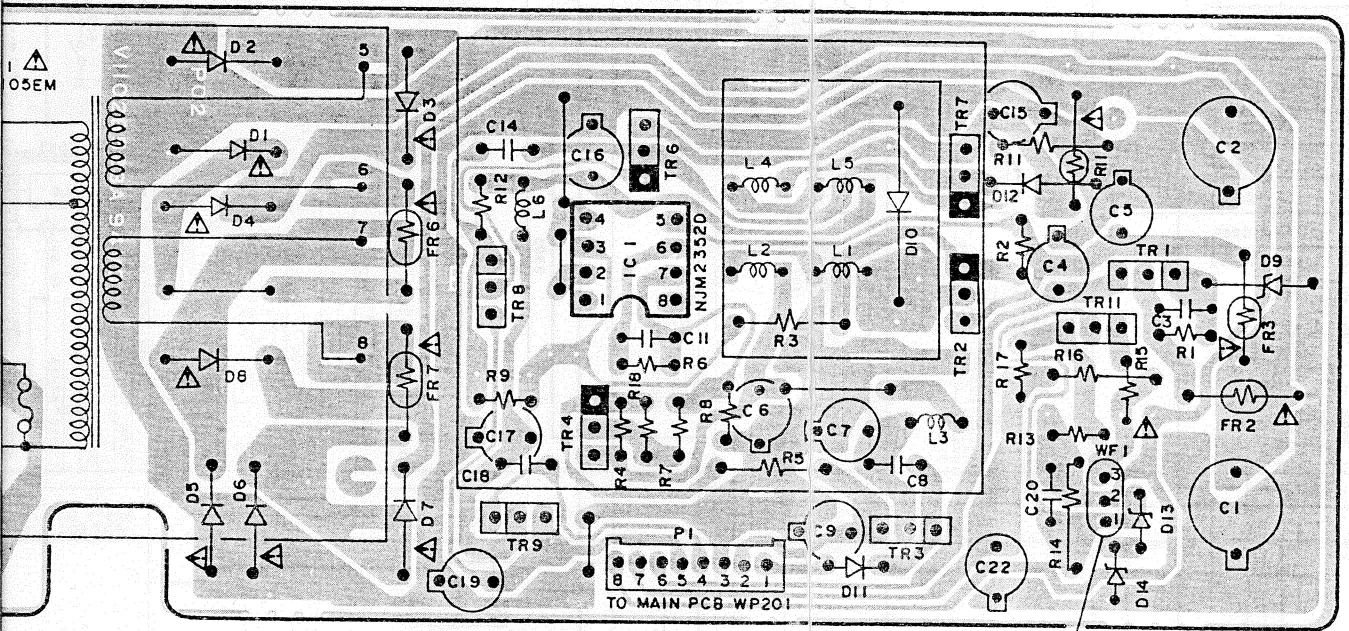


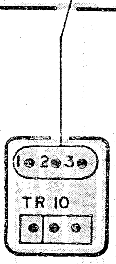
2SD1761
2SD1944



2SC3330


05EM
D2
5
D3
D1
6
D4
7
FR6
8
D8
FR7
D5
D6
D7
C14
R12
C16
TR6
L6
IC1
NJM2352D
TR8
L4
L5
L2
L1
R3
D10
TR7
C15
R11
D12
C5
C4
R2
TR1
D9
TR11
C3
R1
FR3
TR2
C11
R6
R9
R18
R8
C6
C7
L3
C17
TR4
R4
R7
R5
C8
C18
R17
R16
R15
FR2
R13
WF1
C20
D13
C1
C2
R14
D14
C22
TR9
P1
8 7 6 5 4 3 2 1
TO MAIN PCB WP201
C9
TR3
D11
C19

POWER SUPPLY (1) PCB V1102B523A (J1)

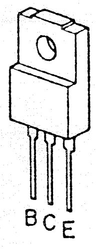


TR PCB
V1102B523B (J1)

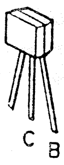
NPN TRANSISTOR

PNP TRANSISTOR

91



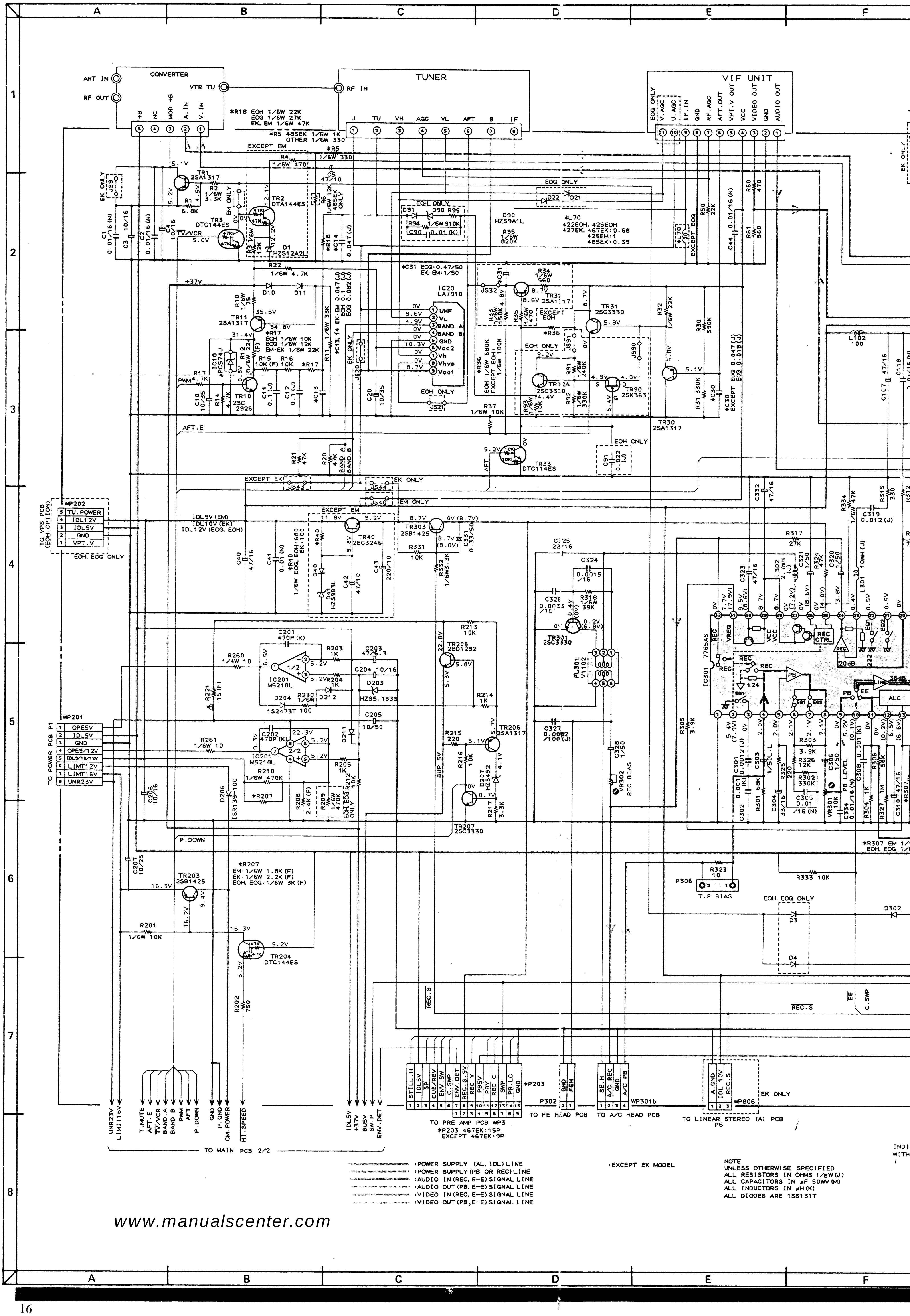
2SD3169
2SD1761
2SD1944
2SD2012



2SA1317
2SC3330
DTC143ES
DTC143TS

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

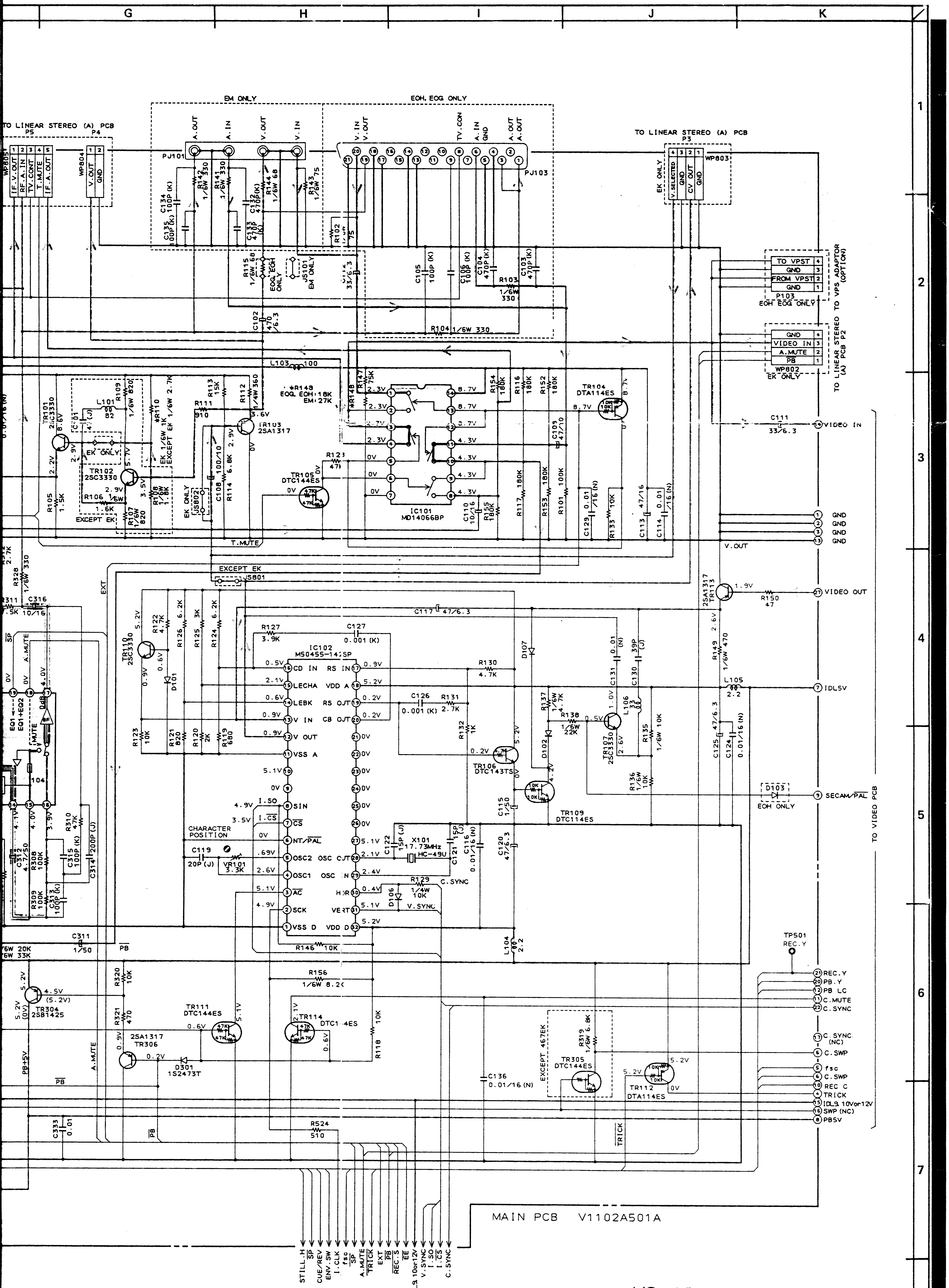
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


A
B
C
D
E
F
1
2
3
4
5
6
7
8
ANT IN
RF OUT
CONVERTER
VTR TU
+B
NC
MOD +B
A.IN
V.IN
TUNER
RF IN
U
TU
VH
AGC
VL
AFT
B
IF
VIF UNIT
EOG ONLY
V.AGC
U.AGC
IF.IN
GND
RF.AGC
AFT.OUT
VPT.V OUT
VCC
VIDEO OUT
GND
AUDIO OUT
*R18 EOH 1/6W 22K
EOG 1/6W 27K
EK, EM 1/6W 47K
*R5 485EK 1/6W 1K
OTHER 1/6W 330
EXCEPT EM
TR1 2SA1317
TR2 DTA144ES
TR3 DTC144ES
D1 HZS12A2L
EOH ONLY
EOG ONLY
D90 HZS9A1L
*L70
422EOH, 425EOH
427EK, 467EK: 0.68
425EM: 1
485EK: 0.39
*C31 EOG: 0.47/50
EK, EM: 1/50
IC20 LA7910
UHF
VL
BAND A
BAND B
GND
Vcc2
Vh
Vhyp
Vcc1
TR10 2SC2926
TR11 2SA1317
IC10 PC574J
*R17
EOH 1/6W 10K
EOG 1/6W 12K
EM·EK 1/6W 22K
*C13, 14 EK·EM 0.047 (J)
EOH 0.033 (J)
EOG 0.082 (J)
TR31 2SC3330
TR32 2SA1317
TR30 2SA1317
TR33 DTC114ES
TR90 2SK363
*R36 EOH 1/6W 680K
EXCEPT EOH 1/6W 100K
*C30 EOG 0.047 (J)
EXCEPT EOG 0.018 (J)
AFT.E
PWM
EXCEPT EK
EK ONLY
EM ONLY
WP202
TU.POWER
IDL12V
IDL5V
GND
VPT.V
TO VPS PCB (EOH: OPTION)
EOH, EOG ONLY
IDL9V (EM)
IDL10V (EK)
IDL12V (EOG, EOH)
EXCEPT EM
TR40 2SC3246
D41 HZS9B3L
*R40 EOH: 680
EK: 100
1/6W EOG, EOH: 0
TR303 2SB1425
TR301 2SC3330
FL301 V1102
IC201 M5218L
TR205 2SD1292
TR206 2SA1317
TR207 2SC3330
D207 HZS4B2
HZS5.1B3S
1S2473T
ISR139-100
WP201
OPE5V
IDL5V
GND
OPE9/12V
IDL9/10/12V
LIMT12V
LIMT16V
UNR23V
TO POWER PCB P1
P.DOWN
TR203 2SB1425
TR204 DTC144ES
*R207
EM: 1/6W 1.8K (F)
EK: 1/6W 2.2K (F)
EOH, EOG: 1/6W 3K (F)
IC301 7765AS
REC
VREG
VCC
REC CTRL
PB
EE
ALC
20dB
36dB
VR302 REC BIAS
VR301 10K PB LEVEL
P306
T.P BIAS
EOH, EOG ONLY
D3
D4
D302
REC.S
EE
C.SWP
UNR23V
LIMIT16V
T.MUTE
AFT.E
TV/VCR
BAND.A
BAND.B
PWM
AFT
P.DOWN
GND
P.GND
CM.POWER
HI.SPEED
TO MAIN PCB 2/2
IDL5V
+37V
BU5V
SW.P
ENV.DET
STILL.H
IDL5V
SP
CUE/REV
ENV.SW
C.SWP
ENV.DET
REC.S.9V
REC Y
PB5V
PBY
REC C
SWP
PB.LC
GND
*P203
P302
GND
FEH
SE.H
A/C REC
GND
A/C PB
WP301b
A.GND
IDL 10V
REC.S
WP806
EK ONLY
TO PRE AMP PCB WP3
*P203 467EK: 15P
EXCEPT 467EK: 9P
TO FE HEAD PCB
TO A/C HEAD PCB
TO LINEAR STEREO (A) PCB
P6
*R307 EM 1/
EOH, EOG 1/
INDI
WITH
(

:POWER SUPPLY (AL, IDL) LINE
:POWER SUPPLY (PB OR REC) LINE
:AUDIO IN (REC, E–E) SIGNAL LINE
:AUDIO OUT (PB, E–E) SIGNAL LINE
:VIDEO IN (REC, E–E) SIGNAL LINE
:VIDEO OUT (PB, E–E) SIGNAL LINE

:EXCEPT EK MODEL

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131T


G
H
I
J
K
1
2
3
4
5
6
7
8
TO LINEAR STEREO (A) PCB
P5
P4
WP805
IF.V.OUT
RF.A.IN
TV.CONT
T.MUTE
IF.A.OUT
WP804
V.OUT
GND
EM ONLY
EOH, EOG ONLY
PJ101
A.OUT
A.IN
V.OUT
V.IN
TV.CON
GND
PJ103
TO LINEAR STEREO (A) PCB
P3
WP803
EK ONLY
V.SELECTED
CV OUT
TO VPST
FROM VPST
P103
EOH EOG ONLY
TO VPS ADAPTOR (OPTION)
VIDEO IN
A.MUTE
PB
WP802
EK ONLY
TO LINEAR STEREO (A) PCB P2
R104 1/6W 330
L103 100
*R149 EOG, EOH:18K EM:27K
TR101 2SC3330
TR102 2SC3330
TR103 2SA1317
TR104 DTA114ES
TR105 DTC144ES
IC101 MD14066BP
EXCEPT EK
T.MUTE
EK ONLY
C111 33/6.3
VIDEO IN
GND
V.OUT
2SA1317 TR113
R150 47
VIDEO OUT
IC102 M50455-14SP
CD IN
RS IN
LECHA
VDD A
LEBK
RS OUT
V IN
CB OUT
V OUT
VSS A
SIN
CS
NT/PAL
OSC2
OSC OUT
OSC1
OSC IN
AC
HOR
SCK
VERT
VSS D
VDD D
CHARACTER POSITION
VR101 3.3K
X101 17.73MHz HC-49U
TR106 DTC143TS
TR107 2SC3330
TR109 DTC114ES
TR110 2SC3330
L105 2.2
IDL5V
D103
EOH ONLY
SECAM/PAL
TO VIDEO PCB
C.SYNC
V.SYNC
TR304 2SB1425
TR306 2SA1317
D301 1S2473T
TR111 DTC144ES
TR114 DTC144ES
EXCEPT 467EK
TR305 DTC144ES
TR112 DTA114ES
TP501 REC.Y
REC.Y
PB.Y
PB LC
C.MUTE
C.SWP
fsc
REC C
TRICK
IDL5 10Vor12V
SWP (NC)
PB5V
A.MUTE
PB+5V
R524 510
MAIN PCB V1102A501A
STILL.H
SP
CUE/REV
ENV.SW
I.CLK
fsc
A.MUTE
TRICK
EXT
PB
REC.S
EE
IDL5 10or12V
V.SYNC
I.SO
I.CS
C.SYNC
TO MAIN PCB 2/2

ICATED VOLTAGES ARE MEASURED IN PB MODE
H EM MODEL
) REC MODE

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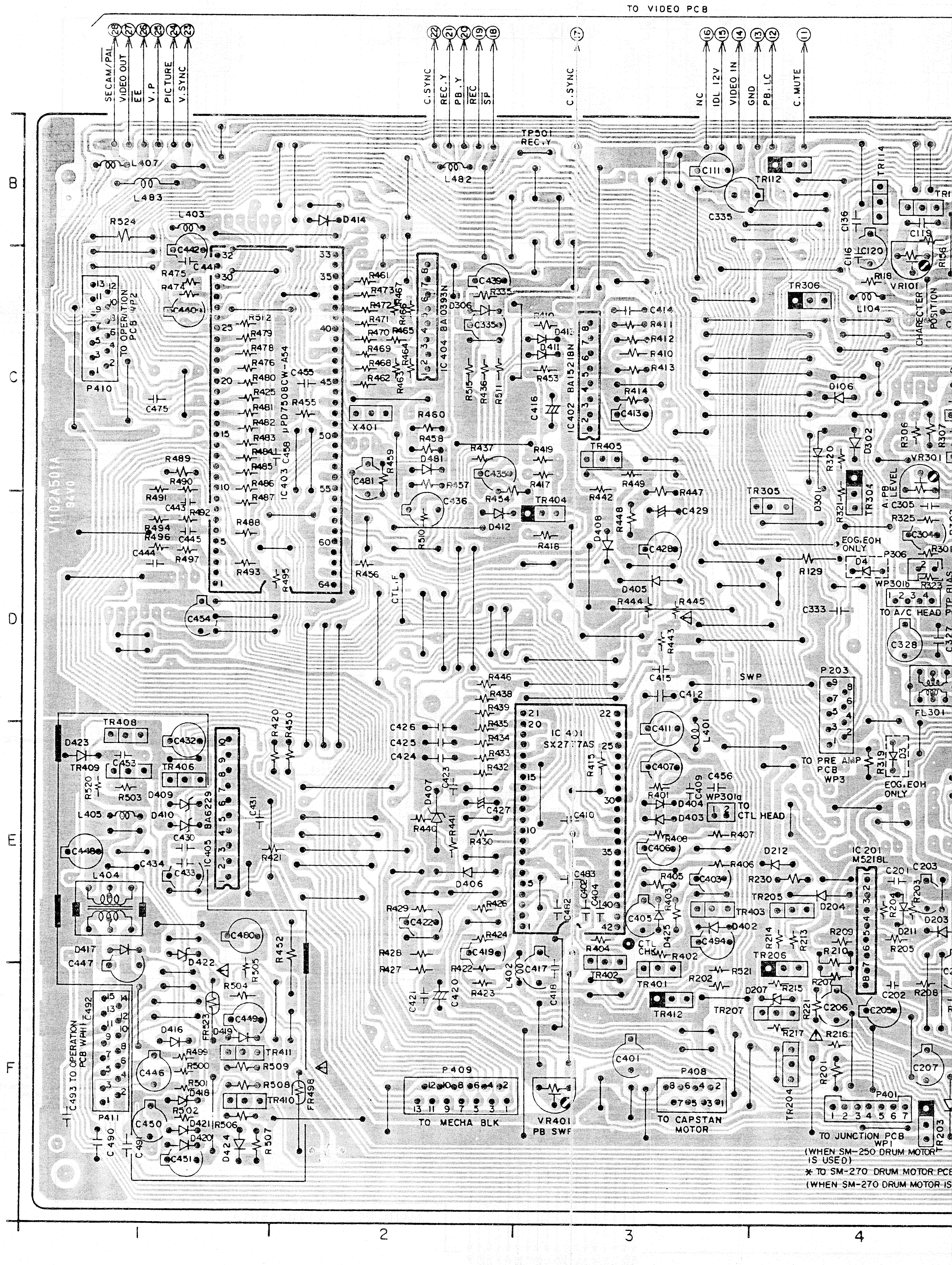
MAIN 1/2
SCHEMATIC DIAGRAM
NO.22-4 V110218M


TO VIDEO PCB
SECAM/PAL
VIDEO OUT
EE
V.P
PICTURE
V.SYNC
C.SYNC
REC.Y
PB.Y
REC
SP
C.SYNC
NC
IDL 12V
VIDEO IN
GND
PB.LC
C.MUTE
TP501 REC.Y
B
C
D
E
F
1
2
3
4
V1102A501A
IC 403 µPD7508CW-A54
IC 404 BA0393N
IC 402 BA15218N
IC 401 SX27?7AS
IC 405 BA6229
IC 201 M5218L
TO OPERATION PCB 4P2
P410
TO OPERATION PCB WPH1
P411
P409
TO MECHA BLK
VR401 PB SWF
P408
TO CAPSTAN MOTOR
TO JUNCTION PCB WP1
(WHEN SM-250 DRUM MOTOR IS USED)
* TO SM-270 DRUM MOTOR PCB
(WHEN SM-270 DRUM MOTOR IS
TO CTL HEAD
CTL CHK
TO PRE AMP PCB WP3
P203
EOG, EOH ONLY
TO A/C HEAD
FL301
CHARECTER POSITION
VR101
VR301
A.PB LEVEL
CTL.F
SWP
X401
TR306
TR305
TR304
TR404
TR405
TR406
TR408
TR409
TR410
TR411
TR412
TR401
TR402
TR403
TR205
TR206
TR207
TR204
TR203
TR112
TR114
P306
P401

MAIN PCB V1102A501A (J1)

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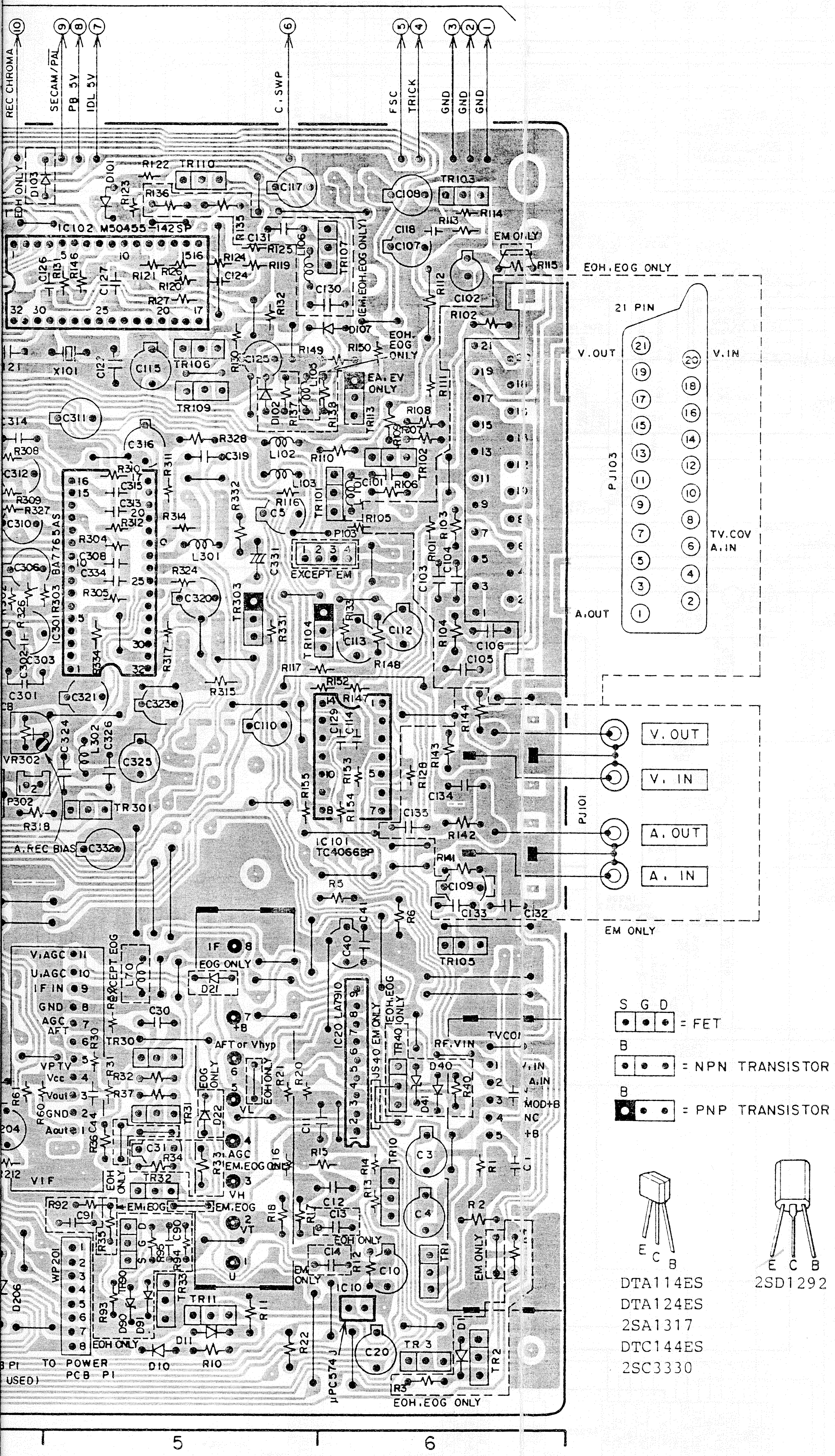
REC CHROMA ⑩
SECAM/PAL ⑨
PB 5V ⑧
IDL 5V ⑦
C.SWP ⑥
FSC ⑤
TRICK ④
GND ③
GND ②
GND ①
EOH ONLY
IC102 M50455-142SP
TR110
TR103
TR106
TR109
TR107
X101
EM ONLY
EOH, EOG ONLY
21 PIN
V.OUT
V.IN
PJ103
TV.COV A.IN
A.OUT
EXCEPT EM
P103
TR303
TR104
TR101
TR102
IC301 R303 BA7765AS
IC101 TC4066BP
VR302
P302
TR301
A.REC BIAS
PJ101
V. OUT
V. IN
A. OUT
A. IN
EM ONLY
TR105
V.AGC
U.AGC
IF IN
GND
AGC
AFT
VPTV
Vcc
Vout
GND
Aout
EXCEPT EOG
EOG ONLY
AFT or Vhyp
IC20 LA7910
US40 EM ONLY
EOH.EOG ONLY
TR40
RF.VIN
TVCO
MOD+B
NC
+8
TR30
TR31
TR32
TR33
TR90
TR11
TR10
TR1
TR2
TR 3
V.AGC
EM.EOG ONLY
EM.EOG
VH
VL
VT
V1F
EOH ONLY
WP201
TO POWER PCB P1
μPC574J
EOH.EOG ONLY
5
6

PRINCPAL PARTS LOCATION

ICS

IC101	F16
IC101	D6
IC201	F4
IC301	D5
IC401	E3
IC403	D1
IC404	C2
IC405	E1

WP

WP2	C1
WP102	C6
WP201	F5
WP301a	E3
WP301b	D4

CONNECTORS

P103	C.D6
P105	C6
P106	C3
P203	E4
P302	E4
P306	D4
P401	F4
P408	F3
P409	F2
P410	C1
P411	F1

TRANSISTORS

TR1	F6
TR2	F6
TR3	F6
TR10	F6
TR11	F5
TR30	E5
TR32	F5
TR33	E5
TR40	E6
TR90	F5
TR101	C5,6
TR102	C6
TR103	B6
TR104	D5,6
TR105	E6
TR107	B6
TR110	B4
TR111	B4
TR112	B4
TR113	C6
TR114	B4
TR203	F4
TR205	E4
TR206	E,F4
TR207	F4
TR301	D5
TR303	D5
TR304	D4
TR305	D4
TR306	C4
TR401	F3
TR402	E,F3
TR403	E3
TR404	D3
TR405	C3
TR406	E1
TR407	C2
TR408	E,D1
TR409	E1
TR410	F1
TR411	F1
TR412	F3

S G D
= FET
B
= NPN TRANSISTOR
B
= PNP TRANSISTOR

DTA114ES
DTA124ES
2SA1317
DTC144ES
2SC3330

2SD1292

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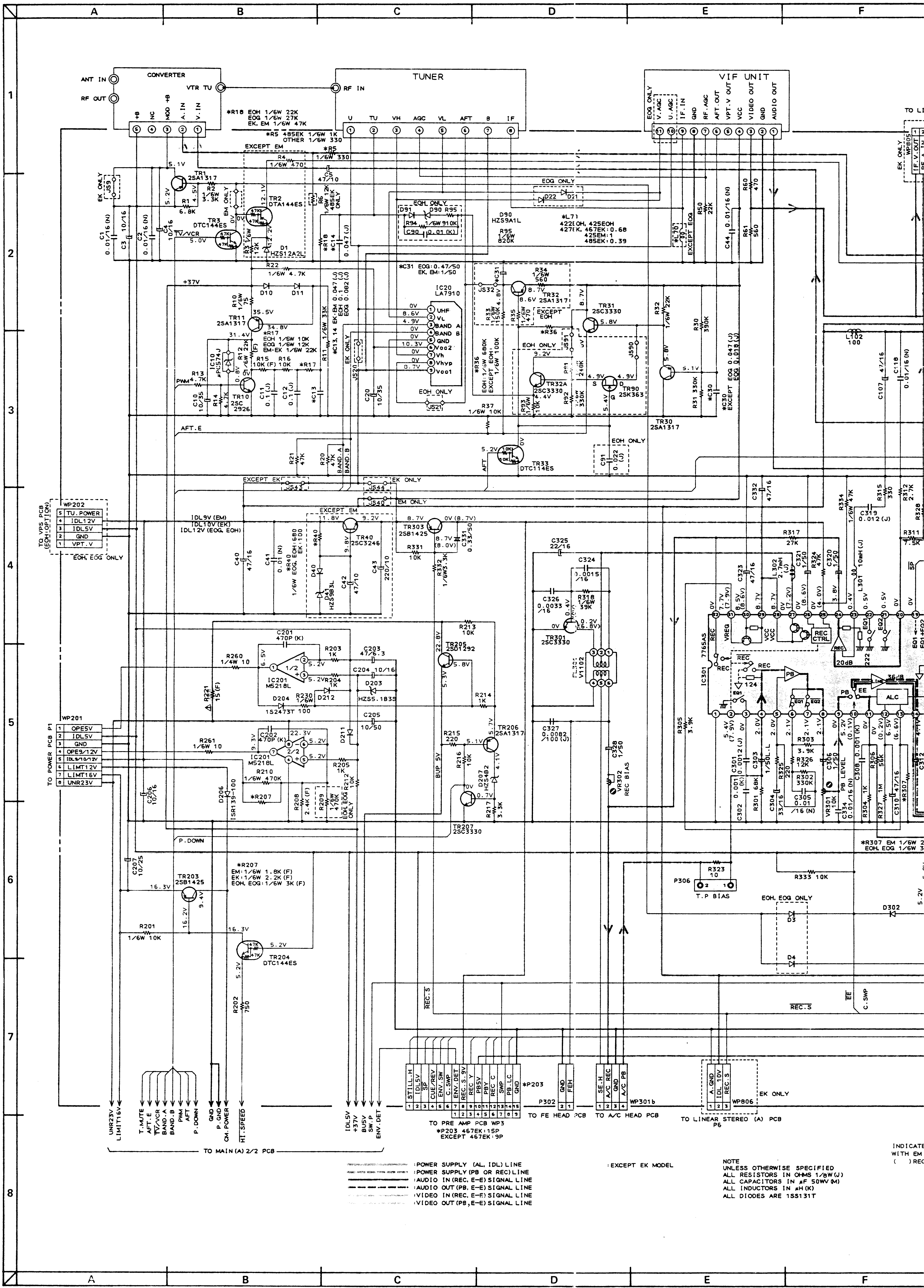
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



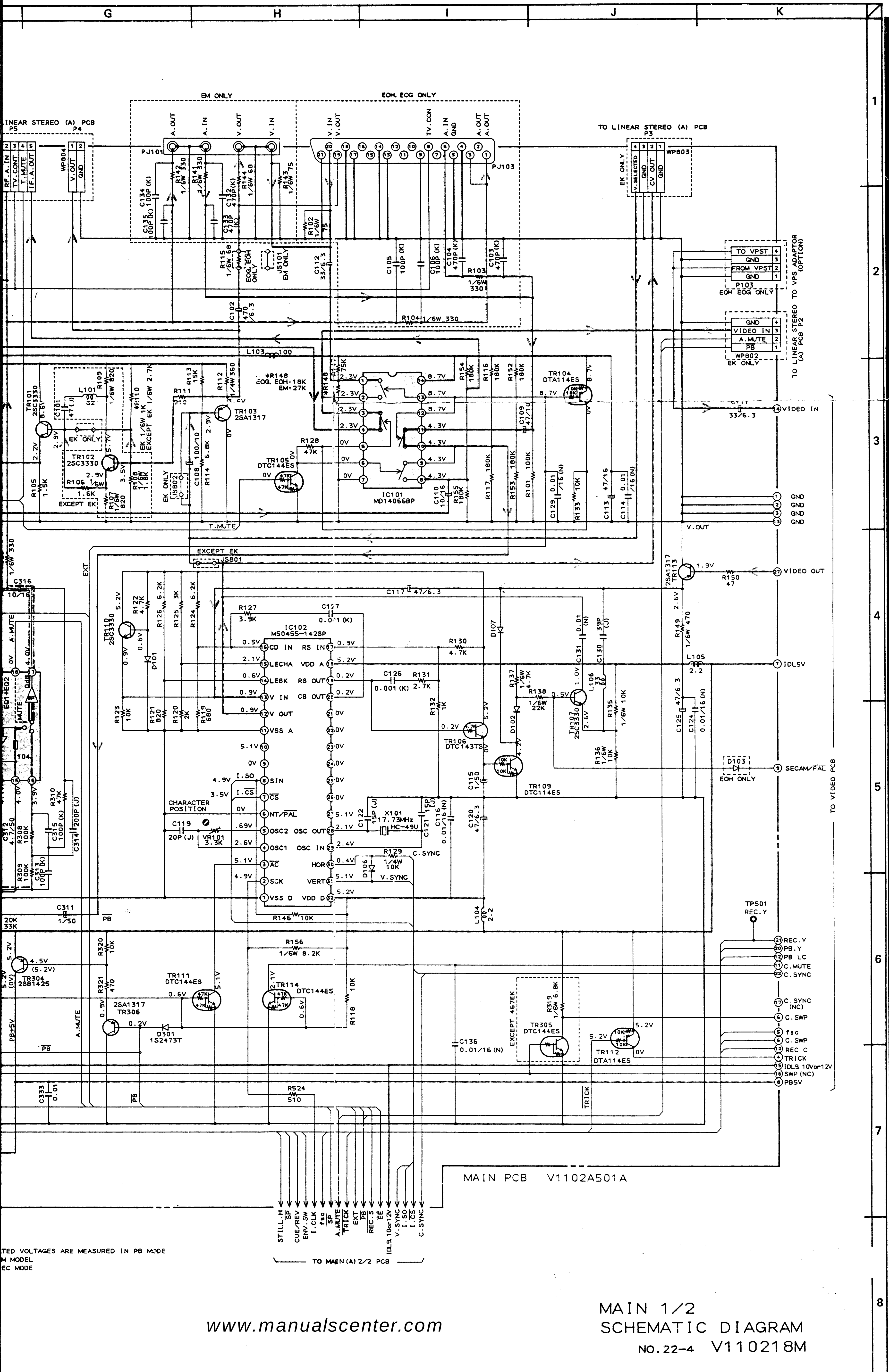
A
B
C
D
E
F
1
2
3
4
5
6
7
8
CONVERTER
ANT IN
RF OUT
VTR TU
+B
NC
MOD +B
A. IN
V. IN
*R18 EOH 1/6W 22K
EOG 1/6W 27K
EK, EM 1/6W 47K
*R5 485EK 1/6W 1K
OTHER 1/6W 330
TUNER
RF IN
U
TU
VH
AGC
VL
AFT
B
IF
VIF UNIT
EOG ONLY
V. AGC
U. AGC
IF. IN
GND
RF. AGC
AFT. OUT
VPT. V OUT
VCC
VIDEO OUT
GND
AUDIO OUT
EXCEPT EM
TR1 2SA1317
TR2 DTA144ES
TR3 DTC144ES
D1 HZS12A2L
EK ONLY
JS9
EM ONLY
TV/VCR
EOH ONLY
D90 HZS9A1L
R95 1/6W 820K
EOG ONLY
D22
D21
*L71
422(OH, 425EOH
427(K, 467EK: 0.68
425EM: 1
485EK: 0.39
*C31 EOG: 0.47/50
EK, EM: 1/50
IC20 LA7910
UHF
VL
BAND A
BAND B
GND
Voc2
Vh
Vhyp
Voc1
TR32 2SA1317
EXCEPT EOH
TR31 2SC3330
TR32A 2SC3330
TR90 2SK363
TR30 2SA1317
TR11 2SA1317
IC10 PC574J
TR10 2SC2926
*R17
EOH 1/6W 10K
EOG 1/6W 12K
EM-EK 1/6W 22K
AFT. E
PWM
TR33 DTC114ES
EOH ONLY
C91 0.022 (J)
EXCEPT EK
EK ONLY
EM ONLY
JS42
JS44
JS40
WP202
TU. POWER
IDL12V
IDL5V
GND
VPT. V
TO VPS PCB (EOH OPTION)
EOH, EOG ONLY
IDL9V (EM)
IDL10V (EK)
IDL12V (EOG, EOH)
EXCEPT EM
TR40 2SC3246
D41 HZS9B3L
TR303 2SB1425
IC201 M5218L
D203 HZS5.1B3S
D204 1S2473T
TR205 2SD1292
TR206 2SA1317
TR207 2SC3330
D207 HZS4B2
TR301 2SC3330
IC301 7765AS
WP201
OPE5V
IDL5V
GND
OPE9/12V
IDL9/10/12V
LIMT12V
LIMT16V
UNR23V
TO POWER PCB P1
D206 ISR139-100
P. DOWN
*R207
EM: 1/6W 1.8K (F)
EK: 1/6W 2.2K (F)
EOH, EOG: 1/6W 3K (F)
TR203 2SB1425
TR204 DTC144ES
R201 1/6W 10K
R202 750
REC. S
VR302 REC BIAS
FL301 V1102
VR301 PB LEVEL
P306
T.P BIAS
R323 10
R333 10K
EOH, EOG ONLY
D302
D3
D4
*R307 EM 1/6W
EOH, EOG 1/6W
EE
C. SWP
REC. S
REC
REC CTRL
20dB
PB
ALC
UNR23V
LIMIT16V
T. MUTE
AFT. E
TV/VCR
BAND. A
BAND. B
PWM
AFT
P. DOWN
GND
P. GND
CM. POWER
HI. SPEED
TO MAIN (A) 2/2 PCB
IDL5V
+37V
BU5V
SW. P
ENV. DET
STILL. H
IDL5V
SP
CUE/REV
ENV. SW
C. SWP
REC. S. 9V
REC. Y
PB5V
PBY
REC. C
SWP
PB. LC
GND
*P203
TO PRE AMP PCB WP3
*P203 467EK: 15P
EXCEPT 467EK: 9P
GND
FEH
P302
TO FE HEAD PCB
SE. H
A/C REC
GND
A/C PB
WP301b
TO A/C HEAD PCB
A. GND
IDL 10V
REC. S
WP806
EK ONLY
TO LINEAR STEREO (A) PCB P6
TO LI
WP805
IF V. OUT

:POWER SUPPLY (AL, IDL) LINE
:POWER SUPPLY (PB OR REC) LINE
:AUDIO IN (REC, E-E) SIGNAL LINE
:AUDIO OUT (PB, E-E) SIGNAL LINE
:VIDEO IN (REC, E-E) SIGNAL LINE
:VIDEO OUT (PB, E-E) SIGNAL LINE

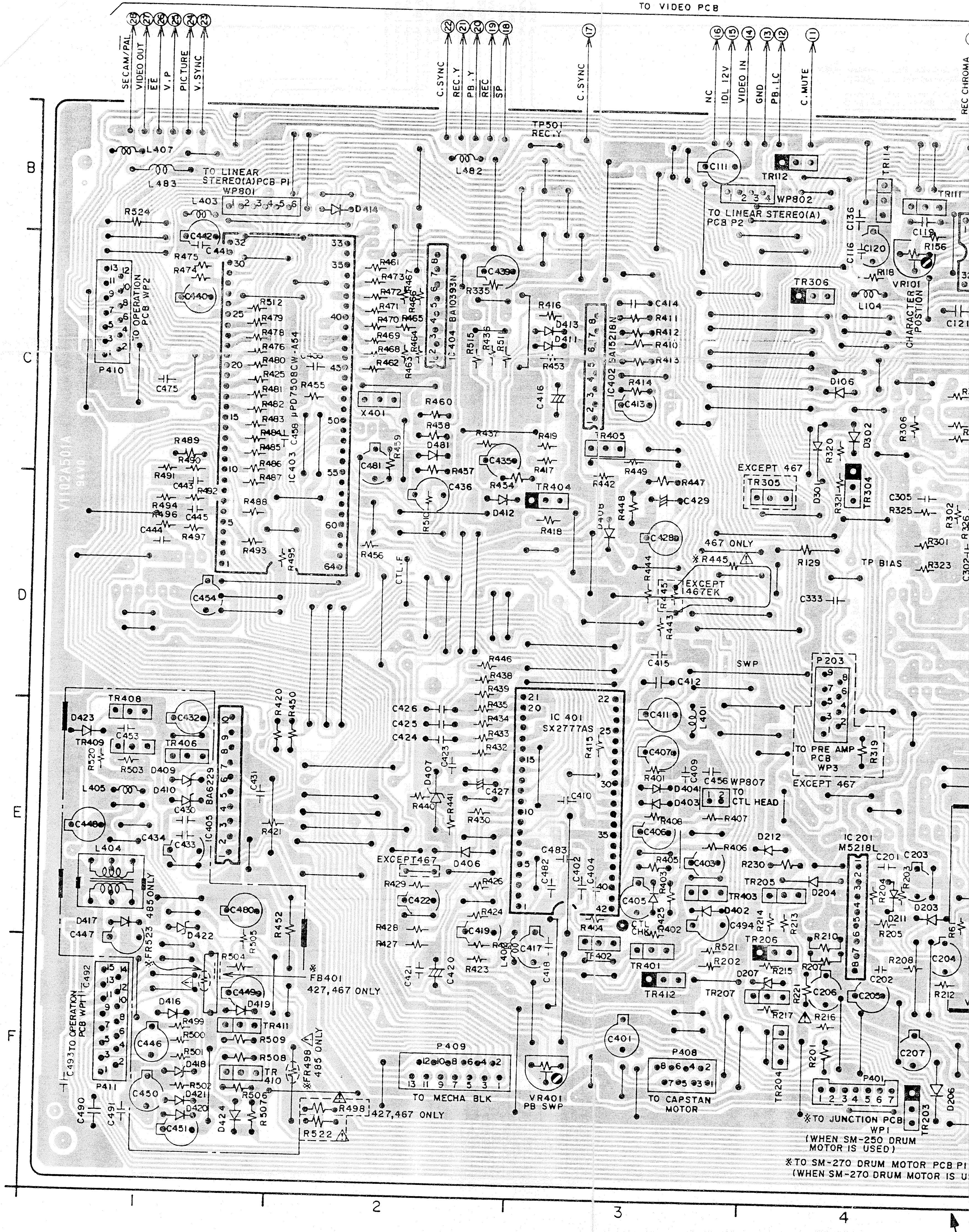
:EXCEPT EK MODEL

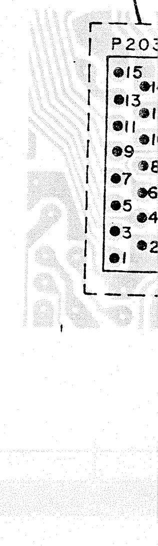
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131T

INDICATE
WITH EM
( ) REC


G
H
I
J
K
1
2
3
4
5
6
7
8
EM ONLY
EOH, EOG ONLY
LINEAR STEREO (A) PCB
P5
P4
RF.A.IN
TV.CONT
T.MUTE
IF.A.OUT
WP804
V.OUT
GND
A.OUT
A.IN
V.OUT
V.IN
PJ101
PJ103
TV.CON
GND
TO LINEAR STEREO (A) PCB
P3
WP803
EK ONLY
V.SELECTED
GND
CV OUT
GND
TO VPST
GND
FROM VPST
GND
P103
EOH EOG ONLY
TO VPS ADAPTOR (OPTION)
GND
VIDEO IN
A.MUTE
PB
WP802
EK ONLY
TO LINEAR STEREO (A) PCB P2
L103 100
R104 1/6W 330
R103 1/6W 330
*R148 EOG, EOH:18K EM:27K
TR101 2SC3330
TR102 2SC3330
TR103 2SA1317
TR104 DTA114ES
TR105 DTC144ES
IC101 MD14066BP
EXCEPT EK
JS801
JS802
T.MUTE
V.OUT
VIDEO IN
GND
GND
GND
GND
TR113 2SA1317
R150 47
VIDEO OUT
C117 47/6.3
IC102 M50455-142SP
CD IN
VDD A
LECHA
LEBK
RS IN
RS OUT
V IN
CB OUT
V OUT
VSS A
SIN
CS
NT/PAL
OSC2
OSC OUT
OSC1
OSC IN
AC
HOR
SCK
VERT
VSS D
VDD D
CHARACTER POSITION
C119 20P (J)
VR101 3.3K
X101 17.73MHz HC-49U
C.SYNC
V.SYNC
TR106 DTC143TS
TR107 2SC3330
TR109 DTC114ES
TR110 2SC3330
L105 2.2
IDL5V
D103
EOH ONLY
SECAM/PAL
TO VIDEO PCB
R146 10K
L104 2.2
TP501 REC.Y
REC.Y
PB.Y
PB LC
C.MUTE
C.SYNC
C.SYNC (NC)
C.SWP
fsc
C.SWP
REC C
TRICK
IDL9, 10Vor12V
SWP (NC)
PB5V
R156 1/6W 8.2K
TR111 DTC144ES
TR114 DTC144ES
TR304 2SB1425
TR306 2SA1317
D301 1S2473T
TR305 DTC144ES
EXCEPT 467EK
R319 1/6W 6.8K
TR112 DTA114ES
C136 0.01/16 (N)
R524 510
C311 1/50
C316 10/16
C333 0.01
PB
A.MUTE
PB+5V
EXT
MAIN PCB V1102A501A
STILL.H
SP
CUE/REV
ENV.SW
I.CLK
fsc
SP
A.MUTE
TRICK
EXT
PB
REC.S
EE
IDL9, 10or12V
V.SYNC
I.SO
I.CS
C.SYNC
TO MAIN (A) 2/2 PCB
TED VOLTAGES ARE MEASURED IN PB MODE
M MODEL
EC MODE

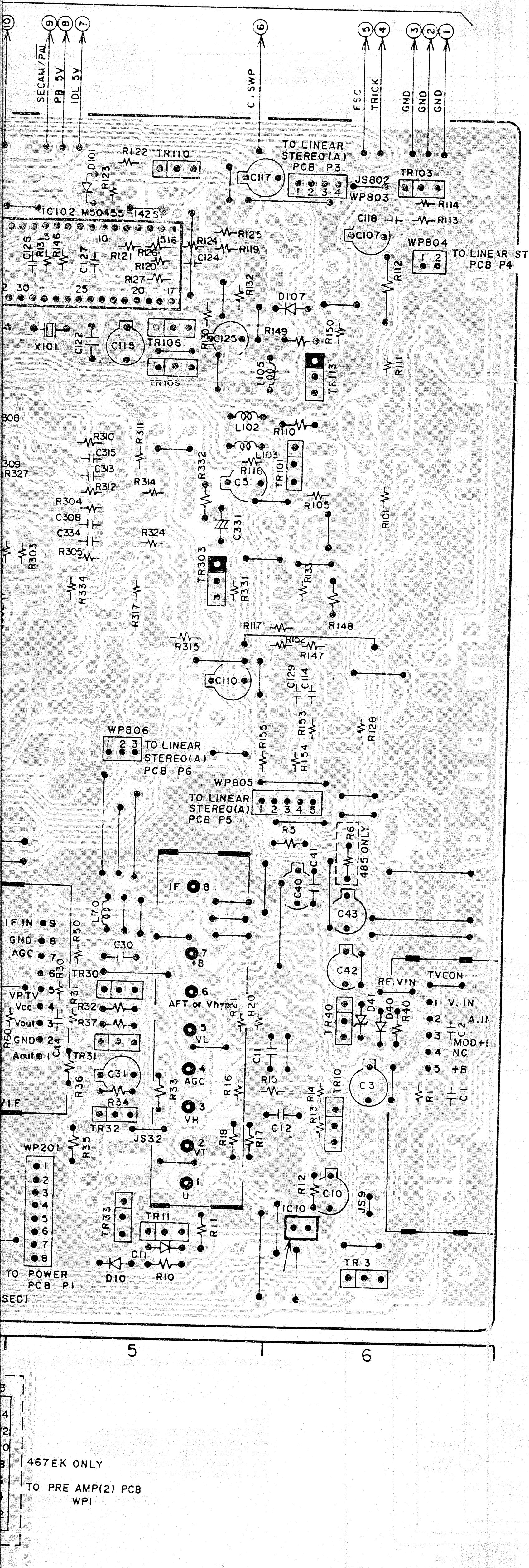
MAIN 1/2
SCHEMATIC DIAGRAM
NO.22-4 V110218M


TO VIDEO PCB
SECAM/PAL
VIDEO OUT
EE
V.P
PICTURE
V.SYNC
C.SYNC
REC.Y
PB.Y
REC
SP
C.SYNC
NC
IDL 12V
VIDEO IN
GND
PB.LC
C.MUTE
REC CHROMA
L407
L483
TO LINEAR STEREO(A)PCB P1
WP801
L403
D414
L482
TP501
REC.Y
C111
TR112
WP802
TO LINEAR STEREO(A) PCB P2
TR114
TR111
C136
C116
C120
C119
R156
R118
VR101
CHARACTER POSITION
L104
TR306
C121
R524
C442
C441
R475
R474
C440
TO OPERATION PCB WP2
P410
C475
IC403 µPD7508CW-A54
IC404 BA10393N
IC402 BA15218N
X401
R460
R458
D481
R457
C481
R459
C435
C436
R454
TR404
D412
R418
R417
R419
R437
R449
R442
R447
C429
C428
D408
R448
C439
R335
R416
D413
D411
R453
C416
R515
R435
C413
R414
R411
R412
R410
R413
C414
TR405
D106
D302
R320
R306
EXCEPT 467
TR305
D301
R321
TR304
C305
R325
R302
R326
R301
R323
R129
TP BIAS
C302
467 ONLY
R445
EXCEPT 1467EK
R444
R443
C333
R489
R490
R491
C443
R492
R494
R496
C445
C444
R497
R488
R493
R495
R456
CTL.F
R510
C454
C415
SWP
C412
P203
TO PRE AMP PCB WP3
R319
EXCEPT 467
TR408
D423
C432
TR409
C453
TR406
R520
R503
D409
D410
L405
C430
IC405 BA6229
C431
R420
R450
R421
C448
C434
C433
L404
485 ONLY
D417
C447
FR523
D422
C480
R505
R452
R504
FB401
427,467 ONLY
C449
D419
TR411
R509
R508
TR410
FR498
485 ONLY
R506
R507
D424
R498
427,467 ONLY
R522
C492
C493 TO OPERATION PCB WP11
D416
R499
C446
R500
R501
D418
R502
D421
D420
C450
C451
C490
C491
P411
R446
R438
R439
R435
R434
R433
R432
C426
C425
C424
C423
D407
R440
R441
C427
R430
IC 401 SX2777AS
R415
C410
EXCEPT467
D406
R429
R426
C422
R424
R428
R427
C419
R423
C421
C420
C483
C482
C402
C404
R404
CTL CH
C417
L402
C418
TR402
P409
TO MECHA BLK
VR401 PB SWP
C401
P408
TO CAPSTAN MOTOR
C411
L401
C407
C409
R401
C456
WP807
D404
D403
TO CTL HEAD
R406
R407
C406
R405
C403
R403
C405
R425
D402
TR403
C494
R521
R202
TR401
TR412
TR207
D212
R230
TR205
D204
R214
R213
TR206
R215
D207
R22
R217
R216
C206
R207
R210
IC201 M5218L
C201
C203
R204
R203
D203
D211
R205
C202
R208
C204
R212
C205
C207
TR204
R201
P401
TO JUNCTION PCB WP1
(WHEN SM-250 DRUM MOTOR IS USED)
TR203
D206
TO SM-270 DRUM MOTOR PCB P1
(WHEN SM-270 DRUM MOTOR IS U
V1102A501A
B
C
D
E
F
1
2
3
4



MAIN PCB V1102A501A(J1)

(VS



10
9
8
7
6
5
4
3
2
1
SECAM/PAL
PB 5V
IDL 5V
C.SWP
FSC
TRICK
GND
GND
GND
TO LINEAR STEREO(A) PCB P3
JS802
WP803
TR103
TR110
R122
D101
R123
C117
R114
R113
C118
C107
IC102 M50455-142SP
WP804
TO LINEAR STEREO(A) PCB P4
R125
R119
R124
C124
R121
R126
R120
R127
C127
C126
R146
R132
R112
D107
R150
R149
C125
X101
C122
C115
TR106
TR109
TR113
L105
R111
L102
R110
L103
R116
C5
TR101
R105
R101
R310
R311
C315
C313
R312
R332
R314
R304
C308
C334
R305
R303
R324
C331
TR303
R331
R133
R334
R317
R148
R117
R152
R147
R315
C110
C129
C114
R153
R128
WP806
TO LINEAR STEREO(A) PCB P6
R155
R154
WP805
TO LINEAR STEREO(A) PCB P5
R5
R6
485 ONLY
C40
C41
C43
IF
IF IN
GND
AGC
R50
L70
C30
TR30
R30
VPTV
Vcc
Vout
GND
Aout
R31
R32
R37
R60
C4
TR31
C31
AFT or Vhyp
R21
R20
VL
C42
RF.VIN
TVCON
V.IN
A.IN
MOD+B
NC
+B
C2
C1
R1
TR40
D41
D40
R40
C11
R36
R34
TR32
JS32
R33
AGC
R16
R15
R14
R13
TR10
C3
VH
C12
VIF
WP201
R35
VT
R18
R17
R12
C10
JS9
IC10
U
TR33
TR11
R11
D11
D10
R10
TR 3
TO POWER PCB P1
SED)
5
6
467EK ONLY
TO PRE AMP(2) PCB WP1

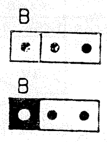
PRINCPAL PARTS LOCATION

ICS
IC10.......F16
IC201......F4
IC401......E3
IC403......D1
IC404......C2
IC405......E1

WP
WP2........C1
WP102......C6
WP201......F5
WP801......B1
WP802......B3,4
WP803......B6
WP804......B,C6
WP805......E5,6
WP806......D5
WP807......E3

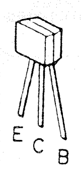
CONNECTORS
P105.......C6
P106.......C3
P203.......E4
P401.......F4
P408.......F3
P409.......F2
P410.......C1
P411.......F1

TRANSISTORS
TR3........F6
TR10.......F6
TR11.......F5
TR30.......E5
TR32.......F5
TR33.......E5
TR40.......E6
TR90.......F5
TR101......C5,6
TR103......B6
TR106......C5
TR110......B4
TR111......B4
TR112......B4
TR113......C6
TR114......B4
TR203......F4
TR205......E4
TR206......E,F4
TR207......F4
TR303......D5
TR304......D4
TR305......D4
TR306......C4
TR401......F3
TR402......E,F3
TR403......E3
TR404......D3
TR405......C3
TR406......E1
TR407......C2
TR408......E,D1
TR409......E1
TR410......F1
TR411......F1
TR412......F3

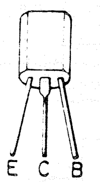


= NPN TRANSISTOR

= PNP TRANSISTOR



DTA114ES
DTA124ES
2SA1317
DTC144ES
2SC3330



2SD1292

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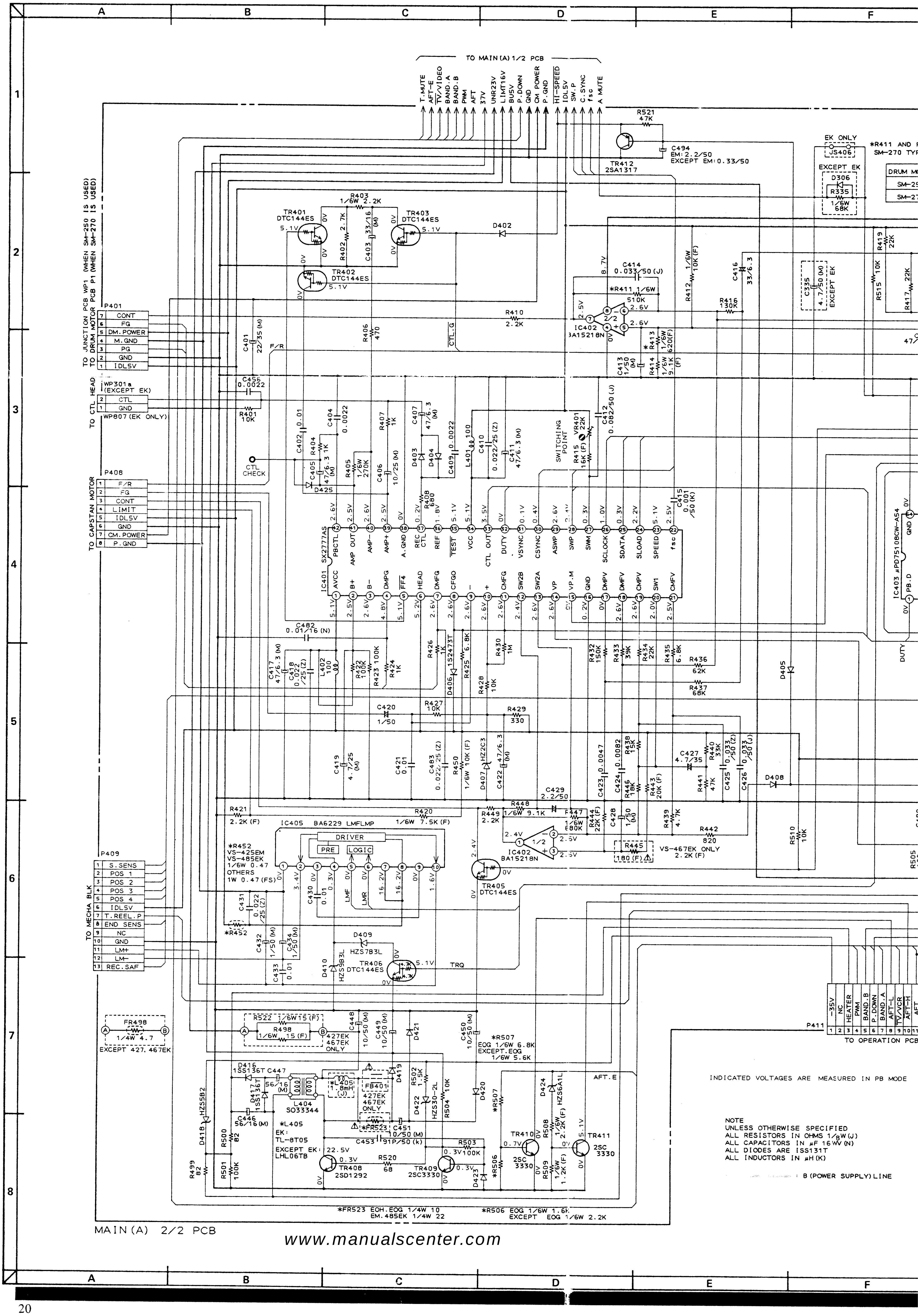
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT


TO MAIN (A) 1/2 PCB
T.MUTE
AFT-E
TV/VIDEO
BAND.A
BAND.B
PWM
AFT
37V
UNR23V
LIMT16V
BUSV
P.DOWN
GND
CM POWER
P.GND
HI-SPEED
IDL5V
SW.P
C.SYNC
fsc
A MUTE
R521 47K
TR412 2SA1317
C494 EM:2.2/50 EXCEPT EM:0.33/50
EK ONLY
JS406
EXCEPT EK
D306
R335 1/6W 68K
*R411 AND
SM-270 TYP
DRUM MO
TR401 DTC144ES
TR402 DTC144ES
TR403 DTC144ES
R403 1/6W 2.2K
D402
TO JUNCTION PCB WP1 (WHEN SM-250 IS USED)
TO DRUM MOTOR PCB P1 (WHEN SM-270 IS USED)
P401
CONT
FG
DM.POWER
M.GND
PG
GND
IDL5V
TO CTL HEAD
WP301a (EXCEPT EK)
CTL
GND
WP807 (EK ONLY)
R401 10K
C456 0.0022
CTL CHECK
TO CAPSTAN MOTOR
P408
F/R
FG
CONT
LIMIT
IDL5V
GND
CM.POWER
P.GND
IC401 SX2777AS
PBCTL
AMP OUT
AMP-
AMP+
A.GND
REC CTL
REF
TEST
VCC
CTL OUT
DUTY
VSYNC
CSYNC
ASWP
SWP
SWM
SCLOCK
SDATA
SLOAD
SPEED
fsc
AVCC
B+
B-
DMPG
FF4
HEAD
DMFG
CFGO
CMFG
SW2B
SW2A
VP
VP.M
GND
DMPV
DMFV
CMPV
SW1
CMFV
IC402 BA15218N
SWITCHING POINT
R401 22K
C414 0.033/50 (J)
*R411 1/6W 510K
R410 2.2K
C482 0.01/16 (N)
IC403 µPD75108CW-A54
TO MECHA BLK
P409
S.SENS
POS 1
POS 2
POS 3
POS 4
IDL5V
T.REEL.P
END SENS
NC
GND
LM+
LM-
REC.SAF
IC405 BA6229 LMFLMP
DRIVER
PRE
LOGIC
*R452 VS-425EM VS-485EK 1/6W 0.47 OTHERS 1W 0.47 (FS)
R421 2.2K (F)
R420 1/6W 7.5K (F)
TR405 DTC144ES
TR406 DTC144ES
D409 HZS7B3L
TRQ
R445 180 (F)
VS-467EK ONLY 2.2K (F)
FR498 1/4W 4.7
EXCEPT 427, 467EK
R522 1/6W 15 (F)
R498 1/6W 15 (F)
427EK 467EK ONLY
*R507 EOG 1/6W 6.8K EXCEPT EOG 1/6W 5.6K
D416 1SS136T
D417 1SS136T
C447 56/16 (M)
*L405 1.8mH (J)
FB401
427EK 467EK ONLY
L404 SO33344
*FR523
*L405 EK: TL-8T05 EXCEPT EK: LHL06TB
TR408 2SD1292
TR409 2SC3330
TR410 2SC 3330
TR411 2SC 3330
AFT.E
*FR523 EOH.EOG 1/4W 10 EM.485EK 1/4W 22
*R506 EOG 1/6W 1.6K EXCEPT EOG 1/6W 2.2K
P411
-35V
NC
HEATER
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
TO OPERATION PCB
A
B
C
D
E
F
1
2
3
4
5
6
7
8

INDICATED VOLTAGES ARE MEASURED IN PB MODE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN µF 16WV (N)
ALL DIODES ARE 1SS131T
ALL INDUCTORS IN µH (K)

: B (POWER SUPPLY) LINE

MAIN (A) 2/2 PCB

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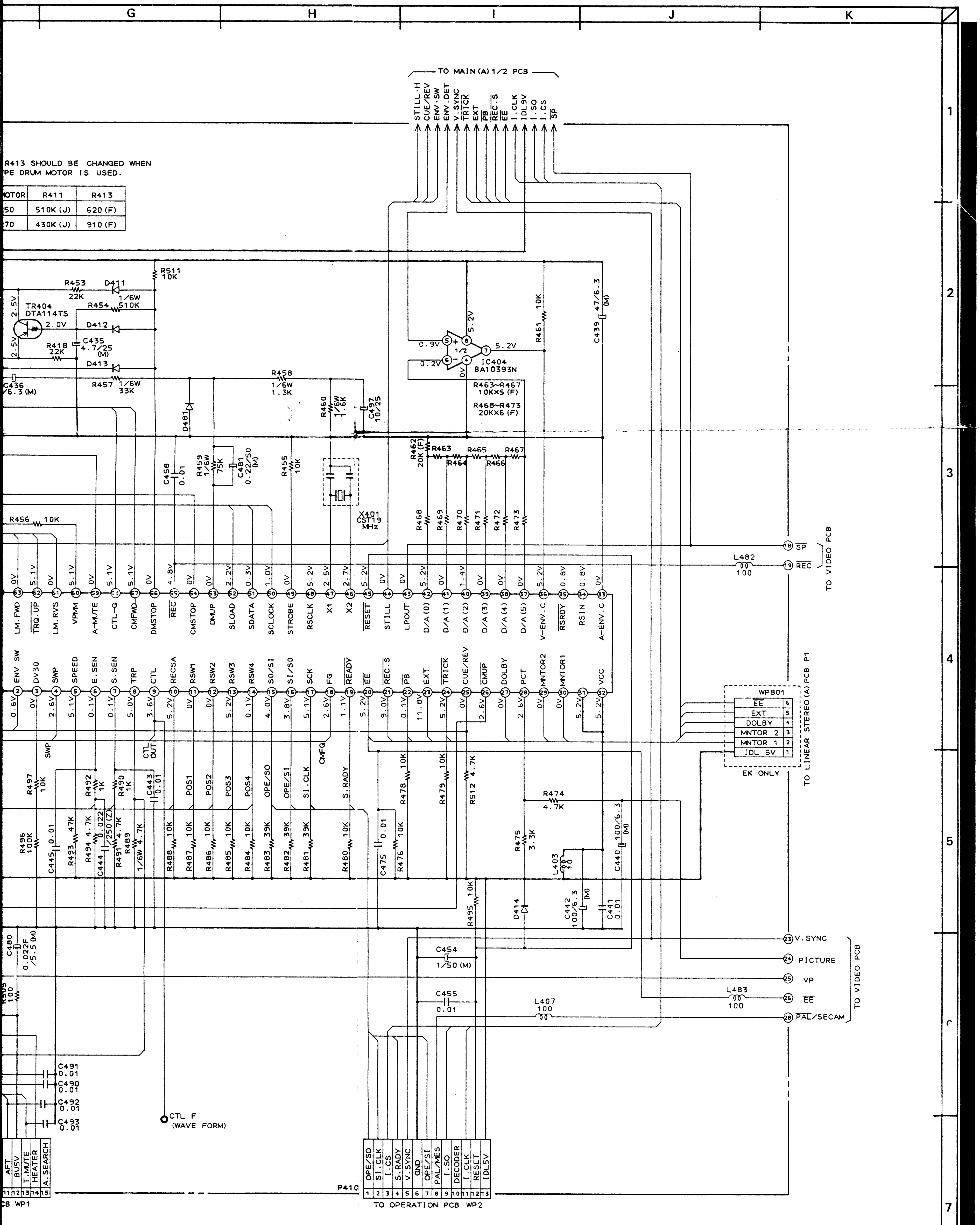

G
H
I
J
K
1
2
3
4
5
6
7
8
TO MAIN (A) 1/2 PCB
STILL·H
CUE/REV
ENV·SW
ENV.DET
V.SYNC
TRICK
EXT
PB
REC.S
EE
I.CLK
IDL9V
I.SO
I.CS
SP
R511 10K
R453 22K
D411
1/6W
R454 510K
TR404 DTA114TS
2.5V
2.0V
D412
R418 22K
C435 4.7/25 (M)
D413
C436 /6.3 (M)
R457 1/6W 33K
R458 1/6W 1.3K
R460 1/6W 1.6K
C497 10/25
D481
0.9V
0.2V
0V
5.2V
IC404 BA10393N
1/2
R463~R467 10K×5 (F)
R468~R473 20K×6 (F)
R461 10K
C439 47/6.3 (M)
R462 20K (F)
R463
R464
R465
R466
R467
C458 0.01
R459 1/6W 75K
C481 0.22/50 (M)
R455 10K
X401 CST19 MHz
R468
R469
R470
R471
R472
R473
R456 10K
LM.FWD
TRQ.UP
LM.RVS
VPMM
A-MUTE
CTL-G
CMFWD
DMSTOP
REC
CMSTOP
DMUP
SLOAD
SDATA
SCLOCK
STROBE
RSCLK
X1
X2
RESET
STILL
LPOUT
D/A(0)
D/A(1)
D/A(2)
D/A(3)
D/A(4)
D/A(5)
V-ENV.C
RSRDY
RSIN
A-ENV.C
ENV SW
DV30
SWP
SPEED
E.SEN
S.SEN
TRP
CTL
RECSA
RSW1
RSW2
RSW3
RSW4
SO/SI
SI/SO
SCK
FG
READY
EE
REC.S
PB
EXT
TRICK
CUE/REV
CMUP
DOLBY
PCT
MNTOR2
MNTOR1
VCC
L482 100
SP
REC
TO VIDEO PCB
WP801
EE
EXT
DOLBY
MNTOR 2
MNTOR 1
IDL 5V
EK ONLY
TO LINEAR STEREO (A) PCB P1
CTL OUT
CMFG
R497 10K
R492 1K
R490 1K
C443 0.01
POS1
POS2
POS3
POS4
OPE/SO
OPE/SI
SI.CLK
S.RADY
R478 10K
R479 10K
R512 4.7K
R474 4.7K
R496 100K
C445 0.01
R493 47K
R494 4.7K
C444 0.022 /250 (Z)
R491 4.7K
R489 1/6W 4.7K
R488 10K
R487 10K
R486 10K
R485 10K
R484 10K
R483 39K
R482 39K
R481 39K
R480 10K
C475 0.01
R476 10K
R475 3.3K
L403 10
C440 100/6.3 (M)
R495 10K
D414
C442 100/6.3 (M)
C441 0.01
C480 0.022F /5.5 (M)
R505 10
C454 1/50 (M)
C455 0.01
L407 100
L483 100
V.SYNC
PICTURE
VP
EE
PAL/SECAM
C491 0.01
C490 0.01
C492 0.01
C493 0.01
CTL F (WAVE FORM)
AFT
BU5V
T.MUTE
HEATER
A.SEARCH
CB WP1
P410
OPE/SO
SI.CLK
I.CS
S.RADY
V.SYNC
GND
OPE/SI
PAL/MES
I.SO
DECODER
I.CLK
RESET
IDL5V
TO OPERATION PCB WP2

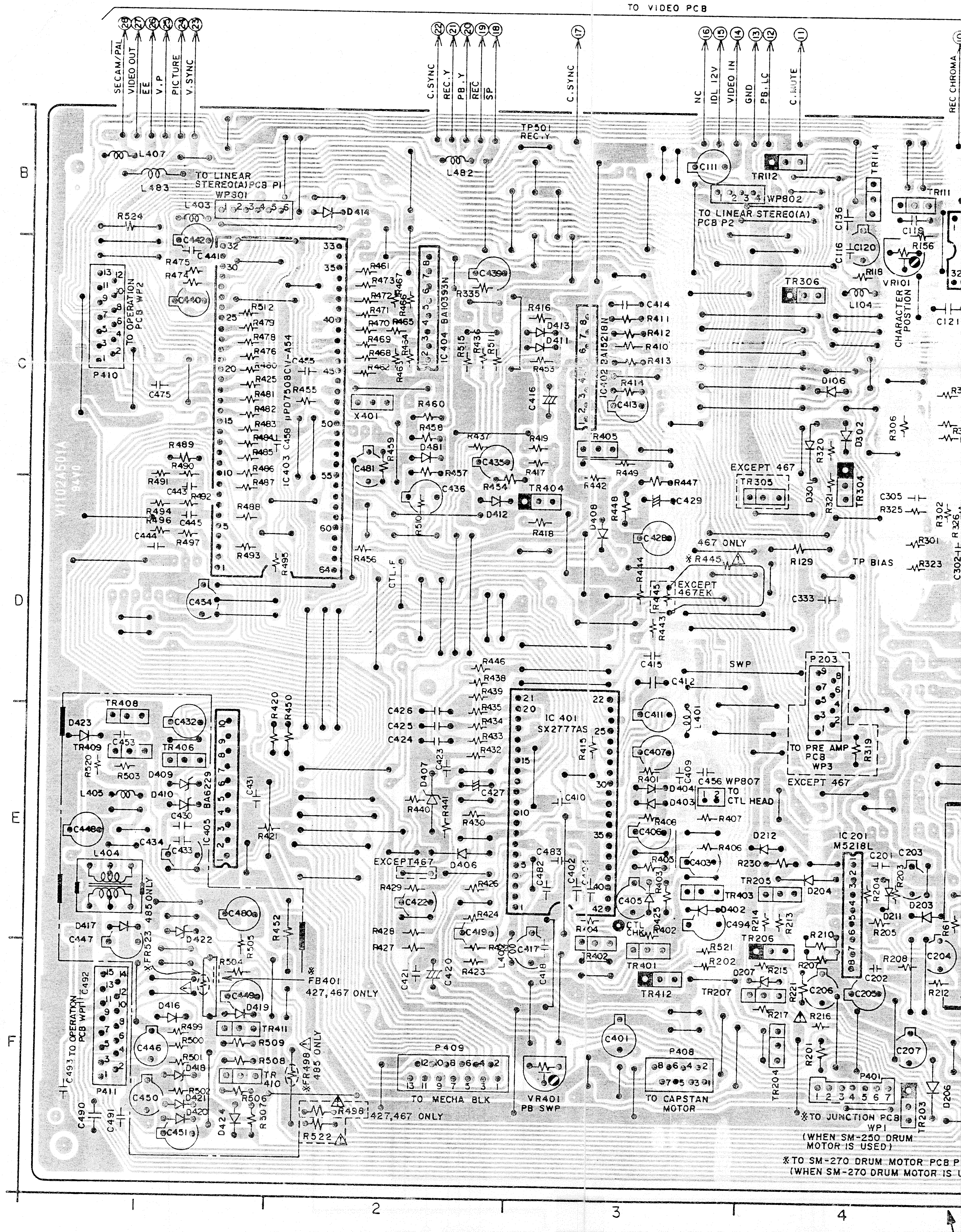
R413 SHOULD BE CHANGED WHEN
PE DRUM MOTOR IS USED.

OTOR	R411	R413
50	510K (J)	620 (F)
70	430K (J)	910 (F)

WARNING: ⚠ AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

MAIN 2/2 (SERVO/SYSCON)
SCHEMATIC DIAGRAM
NO.22-5 V110219M


TO VIDEO PCB
SECAM/PAL
VIDEO OUT
EE
V.P
PICTURE
V.SYNC
C.SYNC
REC.Y
PB.Y
REC
SP
C.SYNC
NC
IDL 12V
VIDEO IN
GND
PB.LC
C.MUTE
REC CHROMA
TP501 REC.Y
TO LINEAR STEREO(A)PCB P1 WP301
TO LINEAR STEREO(A) PCB P2
WP802
TO OPERATION PCB WP2
P410
IC403 μPD7508C(1)-A54
IC404 BA10393N
IC402 BA15218N
IC401 SX2777AS
IC405 BA6229
IC201 M5218L
CHARACTER POSITION
VR101
TP BIAS
467 ONLY
EXCEPT 467
EXCEPT 1467EK
SWP
P203
TO PRE AMP PCB WP3
WP807 TO CTL HEAD
CTL CHK
EXCEPT 467
485 ONLY
FB401 427,467 ONLY
TO OPERATION PCB WP1
P411
P409
TO MECHA BLK
VR401 PB SWP
P408
TO CAPSTAN MOTOR
P401
※TO JUNCTION PCB WP1
(WHEN SM-250 DRUM MOTOR IS USED)
※TO SM-270 DRUM MOTOR PCB P
(WHEN SM-270 DRUM MOTOR IS U
427,467 ONLY
B
C
D
E
F
1
2
3
4
P20

MAIN PCB V1102A501A(J1)

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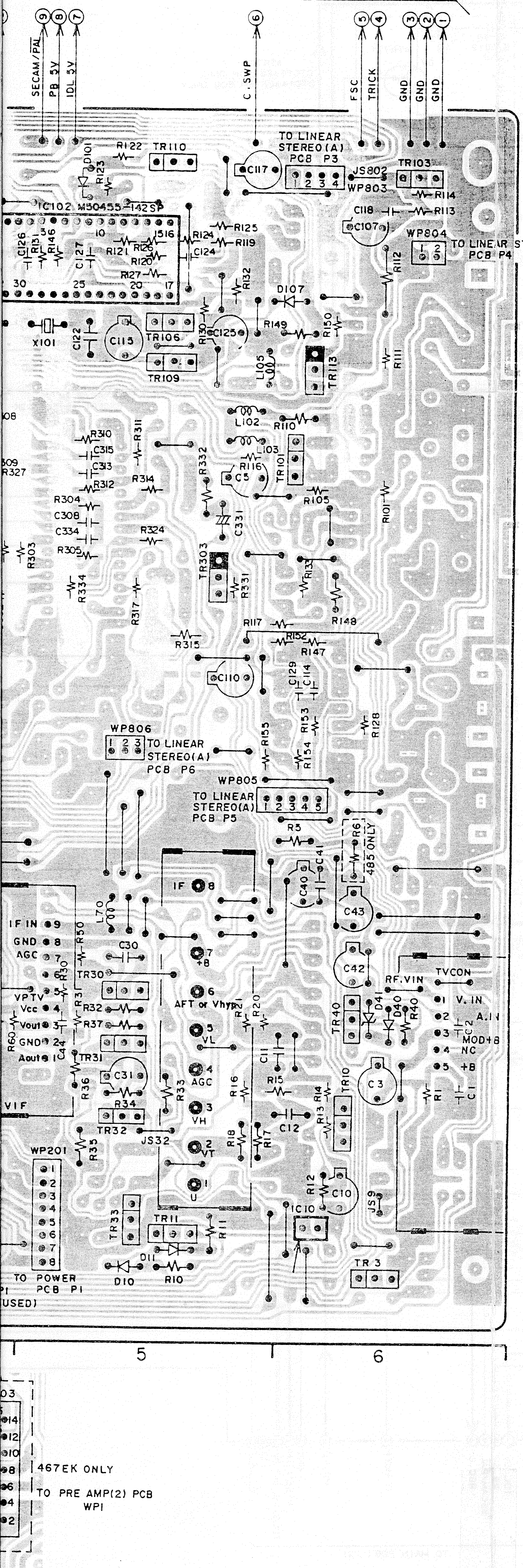

SECAM/PAL
PB 5V
IDL 5V
C.SWP
FSC
TRICK
GND
GND
GND
TO LINEAR STEREO(A) PCB P3
JS802
WP803
TR103
TR110
IC102 M50455-142SP
C117
C107
C118
WP804
TO LINEAR STEREO(A) PCB P4
X101
C115
TR106
TR109
C125
D107
L105
TR113
L102
TR101
C5
C331
TR303
C110
WP806
TO LINEAR STEREO(A) PCB P6
WP805
TO LINEAR STEREO(A) PCB P5
R61 485 ONLY
C40
C43
C42
RF.VIN
TVCON
IF IN
GND
AGC
VPTV
Vcc
Vout
GND
Aout
VIF
TR30
TR31
C31
TR32
JS32
TR40
TR10
C3
AFT or Vhyp
VL
AGC
VH
VT
U
V. IN
A.IN
MOD+8
NC
+B
WP201
TR33
TR11
D11
D10
R10
IC10
C10
JS9
TR 3
TO POWER PCB P1
USED)
5
6
467EK ONLY
TO PRE AMP(2) PCB WP1

PRINCPAL PARTS LOCATION

ICS	
IC10	F16
IC201	F4
IC401	E3
IC403	D1
IC404	C2
IC405	E1

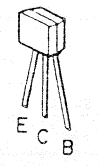
WP	
WP2	C1
WP102	C6
WP201	F5
WP801	B1
WP802	B3,4
WP803	B6
WP804	B,C6
WP805	E5,6
WP806	D5
WP807	E3

CONNECTORS	
P105	C6
P106	C3
P203	E4
P401	F4
P408	F3
P409	F2
P410	C1
P411	F1

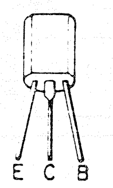
TRANSISTORS	
TR3	F6
TR10	F6
TR11	F5
TR30	E5
TR32	F5
TR33	E5
TR40	E6
TR90	F5
TR101	C5,6
TR103	B6
TR106	C5
TR110	B4
TR111	B4
TR112	B4
TR113	C6
TR114	B4
TR203	F4
TR205	E4
TR206	E,F4
TR207	F4
TR303	D5
TR304	D4
TR305	D4
TR306	C4
TR401	F3
TR402	E,F3
TR403	E3
TR404	D3
TR405	C3
TR406	E1
TR407	C2
TR408	E,D1
TR409	E1
TR410	F1
TR411	F1
TR412	F3

B [● ● ●] = NPN TRANSISTOR

B [■ ● ●] = PNP TRANSISTOR



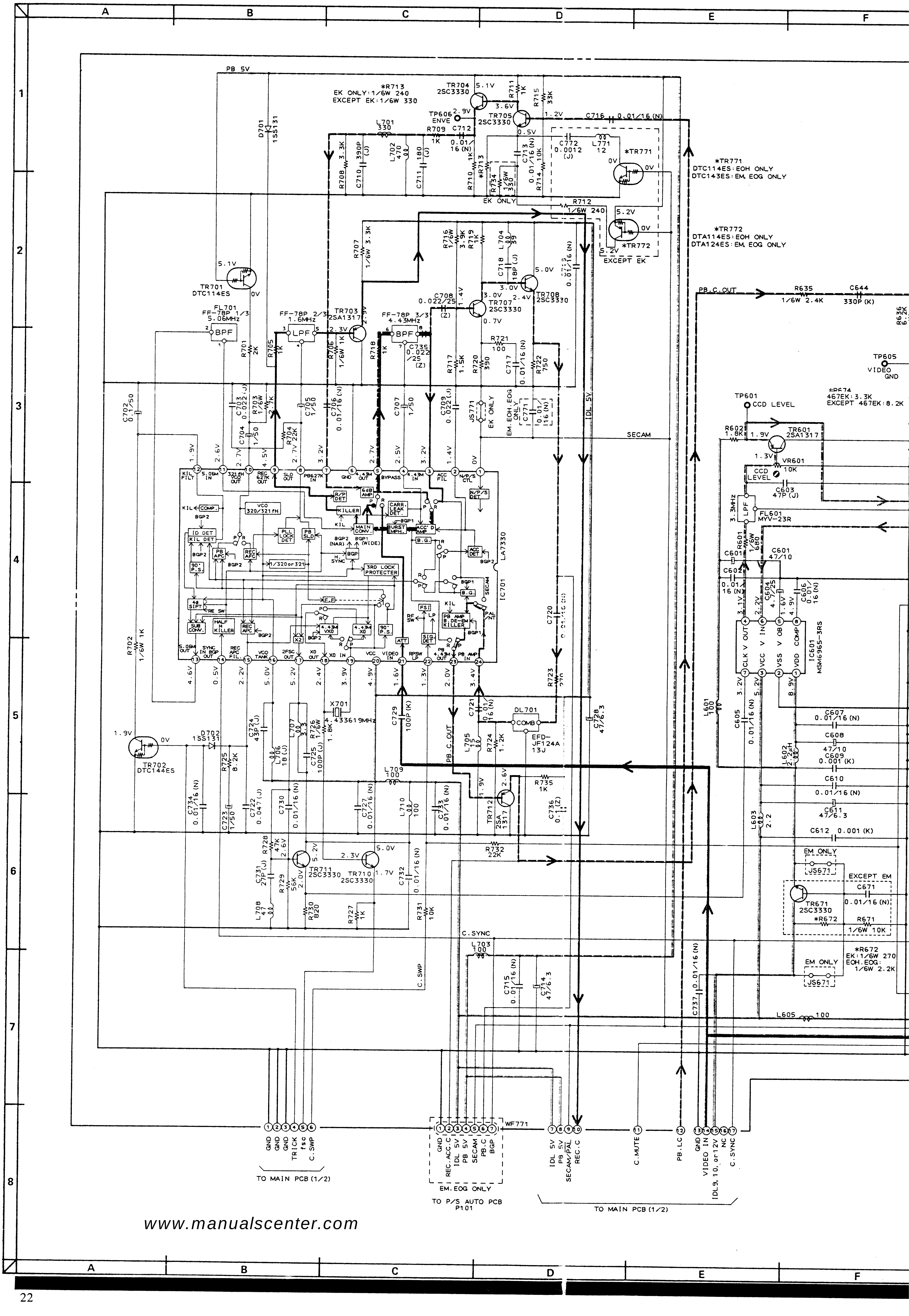
DTA114ES
DTA124ES
2SA1317
DTC144ES
2SC3330

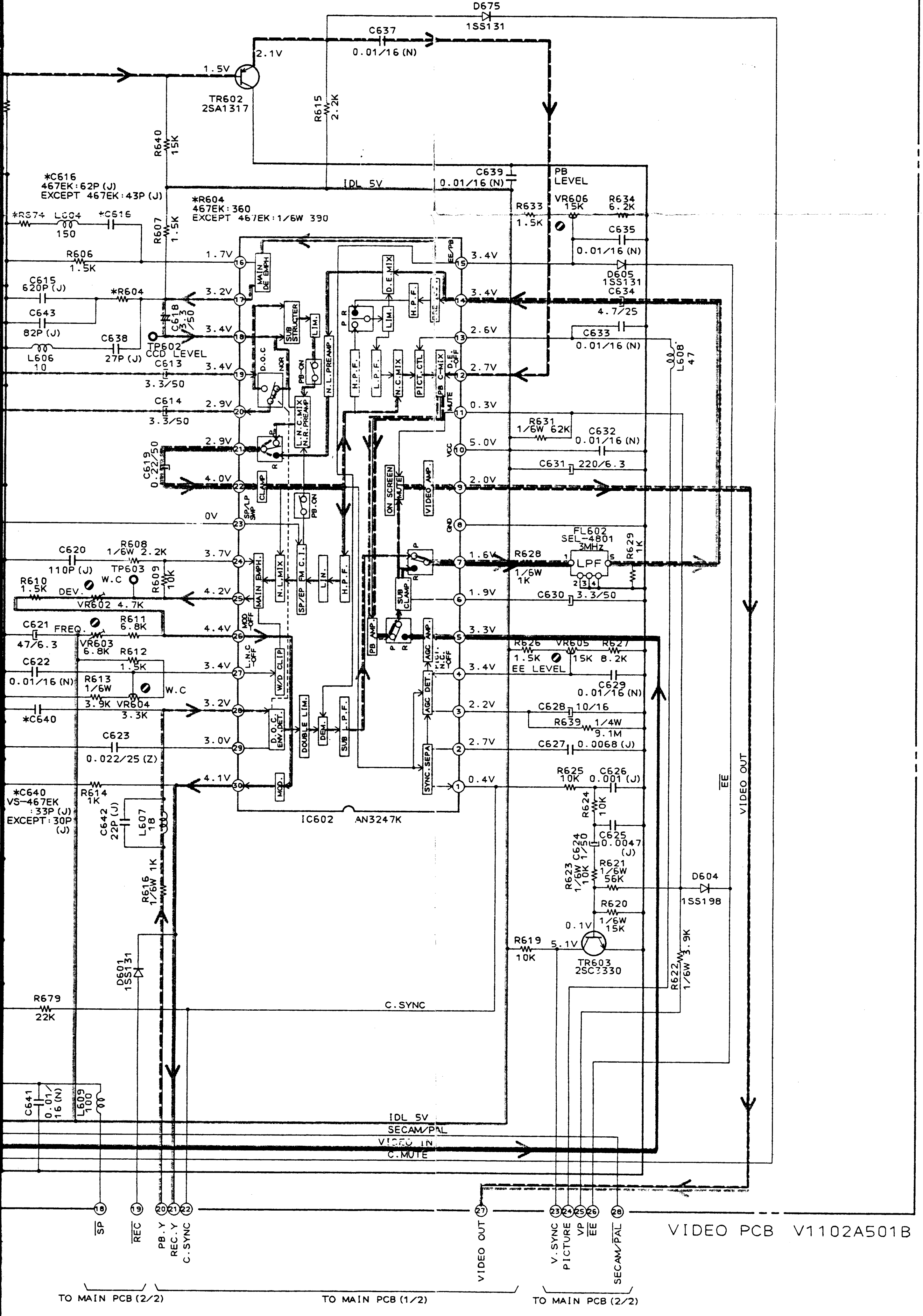


2SD1292

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT


A
B
C
D
E
F
1
2
3
4
5
6
7
8
PB 5V
D701 1SS131
*R713 EK ONLY: 1/6W 240 EXCEPT EK: 1/6W 330
TR704 2SC3330
TR705 2SC3330
TP606 ENVE
L701 330
R709 1K
C712 0.01/16 (N)
R711 1K
R715 33K
C716 0.01/16 (N)
C772 0.0012 (J)
L771 12
*TR771
*TR771 DTC114ES: EOH ONLY DTC143ES: EM, EOG ONLY
R708 3.3K
C710 390P (J)
L702 470
C711 180 (J)
R710 1K
R734 1/6W 330
C713 0.01/16 (N)
R714 10K
EK ONLY
R712 1/6W 240
*TR772
*TR772 DTA114ES: EOH ONLY DTA124ES: EM, EOG ONLY
EXCEPT EK
R707 1/6W 3.3K
R716 1/6W 3.9K
R719 1K
L704 39
C718 18P (J)
C719 0.01/16 (N)
TR701 DTC114ES
FL701 FF-78P 1/3 5.06MHz
BPF
FF-78P 2/3 1.6MHz
LPF
TR703 2SA1317
FF-78P 3/3 4.43MHz
BPF
C708 0.022/25 (Z)
TR707 2SC3330
TR708 2SC3330
PB.C.OUT
R635 1/6W 2.4K
C644 330P (K)
R636 6.2K
TP605 VIDEO GND
R701 2K
R705 1K
R706 1/6W 1K
R718 1K
C735 0.022/25 (Z)
R717 1.5K
R720 390
R721 100
C717 0.01/16 (N)
R722 750
C702 0.1/50
C703 0.022 (J)
R703 1/6W 2.7K
C705 1/50
C706 0.01/16 (N)
C707 1/50
C709 0.022 (J)
JS771 EK ONLY
EM, EOH, EOG ONLY C771 0.01/16 (N)
IDL 5V
SECAM
C704 1/50
R704 22K
TP601 CCD LEVEL
*R674 467EK: 3.3K EXCEPT 467EK: 8.2K
R602 1.8K
TR601 2SA1317
VR601 10K CCD LEVEL
C603 47P (J)
FL601 MYV-23R
R601 1/6W 680
C601 47/10
C602 0.01/16 (N)
C604 4.7/25
C606 0.01/16 (N)
KIL FILT
5.06M IN
321fH VCO OUT
REC 627K OUT
SLD OUT
PB627K IN
GND
4.43M OUT
BYPASS
4.43M IN
ACC FIL
N/P/S CTL
R/P DET
6dB AMP
CARR. LEAK DET.
N/P/S DET
KILLER
COMP.
VCO 320/321fH
ID DET
KIL DET
PLL LOCK DET
PB SLD
MAIN CONV.
BURST EMPH.
ACC'D AMP
B.G.
ACC DET
PB APC
REC AFC
1/320 or 321
BGP
3RD LOCK PROTECTER
90° P.S.
4φ SIFT
RE SW
F.F
SUB CONV.
HALF H KILLER
REC APC
X2
4.43M VXO
4.43M XO
90° P.S.
ATT
FSI
RF SW
LP
PB AMP B.DE-EM KILLER
SIG DET
PAL NT
LA7330
IC701
5.06M OUT
SYNC IN BGP OUT
REC APC FIL.
VCO TANK
2FSC OUT
XO OUT
XO IN
VCC
VIDEO IN
RPSW LP
PB 4.43M OUT
PB AMP IN
CLK V OUT
CC V IN
V OB
COMP
VCC
VSS
VDD
IC601 MSM6965-3RS
R702 1/6W 1K
X701 4.433619MHz
C720 0.01/16 (N)
R723 270
C728 47/6.3
TR702 DTC144ES
D702 1SS131
C724 43P (J)
L707 3.3
L706 18 (J)
C725 100P (J)
R726 1/6W 1.8K
C729 100P (K)
C721 0.01/16 (N)
DL701 COMB EFD-JF124A 13J
L705 15
R724 1.2K
L601 100
C605 0.01/16 (N)
C607 0.01/16 (N)
C608 47/10
L602 2.2μH
C609 0.001 (K)
C610 0.01/16 (N)
C611 47/6.3
R725 8.2K
C734 0.01/16 (N)
C723 1/50
C722 0.047 (J)
C730 0.01/16 (N)
C727 0.01/16 (N)
L709 100
L710 100
C733 0.01/16 (N)
R735 1K
TR712 2SA1317
C736 0.1 (Z)
L603 2.2
C612 0.001 (K)
R728 47K
TR711 2SC3330
TR710 2SC3330
C732 0.01/16 (N)
R732 22K
EM ONLY JS671
EXCEPT EM
C671 0.01/16 (N)
TR671 2SC3330
*R672
R671 1/6W 10K
C731 27P (J)
R729 56K
L708 47
R730 820
R727 1K
R731 10K
C.SYNC
L703 100
C.SWP
C715 0.01/16 (N)
C714 47/6.3
*R672 EK: 1/6W 270 EOH, EOG: 1/6W 2.2K
EM ONLY JS671
C737 0.01/16 (N)
L605 100
WF771
GND GND GND TRICK fsc C.SWP
TO MAIN PCB (1/2)
GND REC.ACC.C IDL 5V PB 5V SECAM PB.C BGP
EM, EOG ONLY
TO P/S AUTO PCB P101
IDL 5V PB 5V SECAM/PAL REC.C
C.MUTE
PB.LC
GND VIDEO IN NC C.SYNC
IDL9, 10, or 12V
TO MAIN PCB (1/2)


D675
1SS131
C637
0.01/16 (N)
2.1V
1.5V
TR602
2SA1317
R615
2.2K
R640
15K
C639
0.01/16 (N)
IDL 5V
PB LEVEL
VR606 15K
R634 6.2K
R633 1.5K
C635
0.01/16 (N)
*C616
467EK:62P (J)
EXCEPT 467EK:43P (J)
*R604
467EK:360
EXCEPT 467EK:1/6W 390
*R674
L604 150
*C616
R607 1.5K
R606 1.5K
C615 620P (J)
*R604
C643 82P (J)
C638 27P (J)
L606 10
C618 1/50
TP602 CCD LEVEL
C613 3.3/50
C614 3.3/50
C619 0.22/50
D605 1SS131
C634 4.7/25
C633 0.01/16 (N)
L608 47
MAIN DE EMPH.
SUB STRACTER
LIM.
D.O.C
NOR
PB-ON
N.L.PREAMP.
N.C.MIX
N.R.PREAMP.
P.R
LIM.
D.E.MIX
H.P.F.
H.P.F.
L.P.F.
N.C.MIX
PICT.CTL
C-MIX
PB MUTE
D.E. OFF
EE/PB
CLAMP
SP/LP SW
PB.ON
ON SCREEN MUTE
VIDEO AMP.
MAIN EMPH.
N.L.MIX
SP/EP FM C.I.
LIM.
H.P.F.
SUB CLAMP
PB AMP.
AGC AMP.
AGC OFF
L.H.C OFF
W/D CLIP
D.O.C ENV.DET.
DOUBLE LIM.
DEM.
SUB L.P.F.
AGC DET.
SYNC SEPA
MOD.
MOD OFF
VCC
GND
1.7V 3.2V 3.4V 3.4V 2.9V 2.9V 4.0V 0V 3.7V 4.2V 4.4V 3.4V 3.2V 3.0V 4.1V
3.4V 3.4V 2.6V 2.7V 0.3V 5.0V 2.0V 1.6V 1.9V 3.3V 3.4V 2.2V 2.7V 0.4V
R631 1/6W 62K
C632 0.01/16 (N)
C631 220/6.3
FL602 SEL-4801 3MHz
LPF
R629 1K
R628 1/6W 1K
C630 3.3/50
R626 1.5K
VR605 15K
R627 8.2K
EE LEVEL
C629 0.01/16 (N)
C628 10/16
R639 1/4W 9.1M
C627 0.0068 (J)
R625 10K
C626 0.001 (J)
R624 10K
C625 0.0047 (J)
C624 1/50
R623 10K
R621 1/6W 56K
R620 1/6W 15K
D604 1SS198
R619 10K
0.1V
5.1V
TR603 2SC3330
R622 1/6W 3.9K
C620 110P (J)
R608 1/6W 2.2K
TP603 W.C
R609 10K
R610 1.5K
DEV.
VR602 4.7K
C621 47/6.3
FREQ.
VR603 6.8K
R611 6.8K
R612 1.5K
C622 0.01/16 (N)
R613 1/6W 3.9K
VR604 3.3K
W.C
*C640
C623 0.022/25 (Z)
*C640 VS-467EK:33P (J) EXCEPT:30P (J)
R614 1K
C642 22P (J)
L607 18
R616 1/6W 1K
D601 1SS131
IC602 AN3247K
R679 22K
C.SYNC
C641 0.01/16 (N)
L609 100
IDL 5V
SECAM/PAL
VIDEO IN
C.MUTE
EE
VIDEO OUT
⑱ SP
⑲ REC
⑳ PB.Y
㉑ REC.Y
㉒ C.SYNC
㉗ VIDEO OUT
㉓ V.SYNC
㉔ PICTURE
㉕ VP
㉖ EE
㉘ SECAM/PAL
TO MAIN PCB (2/2)
TO MAIN PCB (1/2)
TO MAIN PCB (2/2)

VIDEO PCB V1102A501B

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN µF 50WV (M)
ALL INDUCTORS IN µH (K)

POWER SUPPLY (AL. IDL) LINE
POWER SUPPLY (PB or REC) LINE
REC Y SIGNAL LINE
PB Y SIGNAL LINE
REC CHROMA SIGNAL LINE
PB CHROMA SIGNAL LINE

VIDEO
SCHEMATIC DIAGRAM
NO.22-6 V110220M

LOCATION OF COMPONENTS

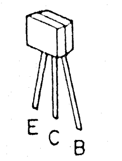
ICS	
IC601	A3
IC602	A2
IC701	A5,6

WIRE

WF771	A4,5

(EM,EOG ONLY)

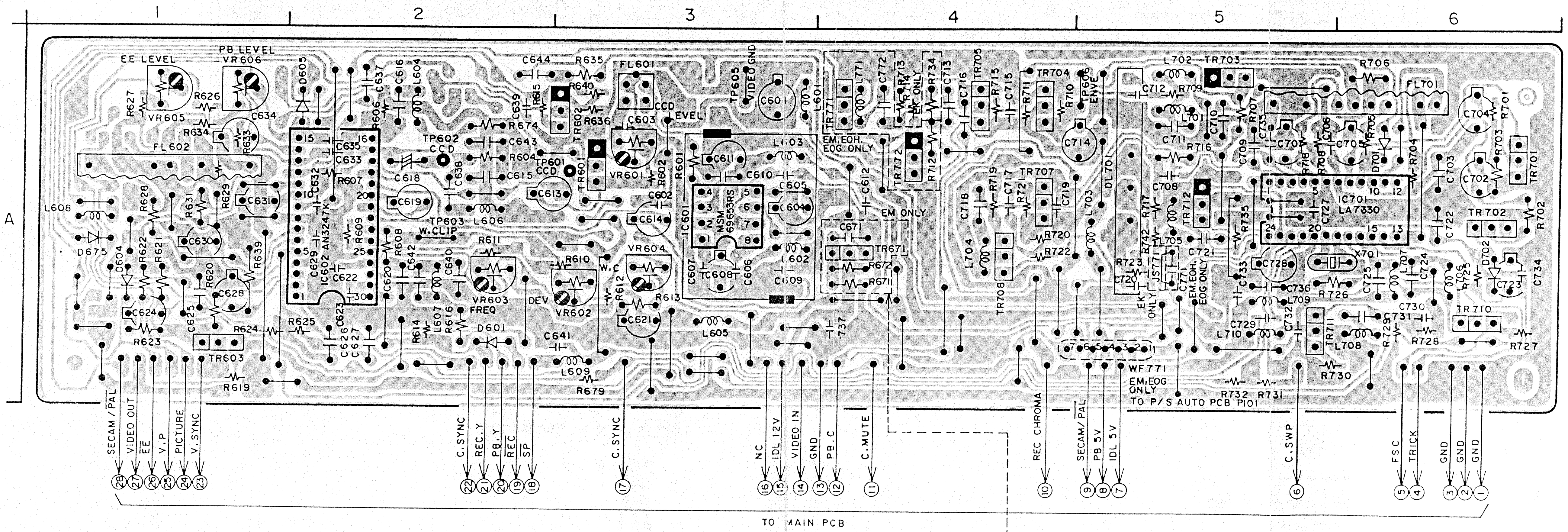
TRANSISTORS	
TR601	A3
TR602	A2,3
TR603	A1
TR671	A4
TR701	A6
TR702	A6
TR703	A5
TR704	A4
TR705	A4
TR707	A4
TR708	A4
TR710	A6
TR711	A5
TR712	A5
TR771	A4
TR772	A4



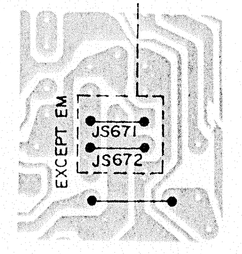
DTA124ES
DTC114ES
DTC143ES
DTC144ES
2SA1317
2SC3330

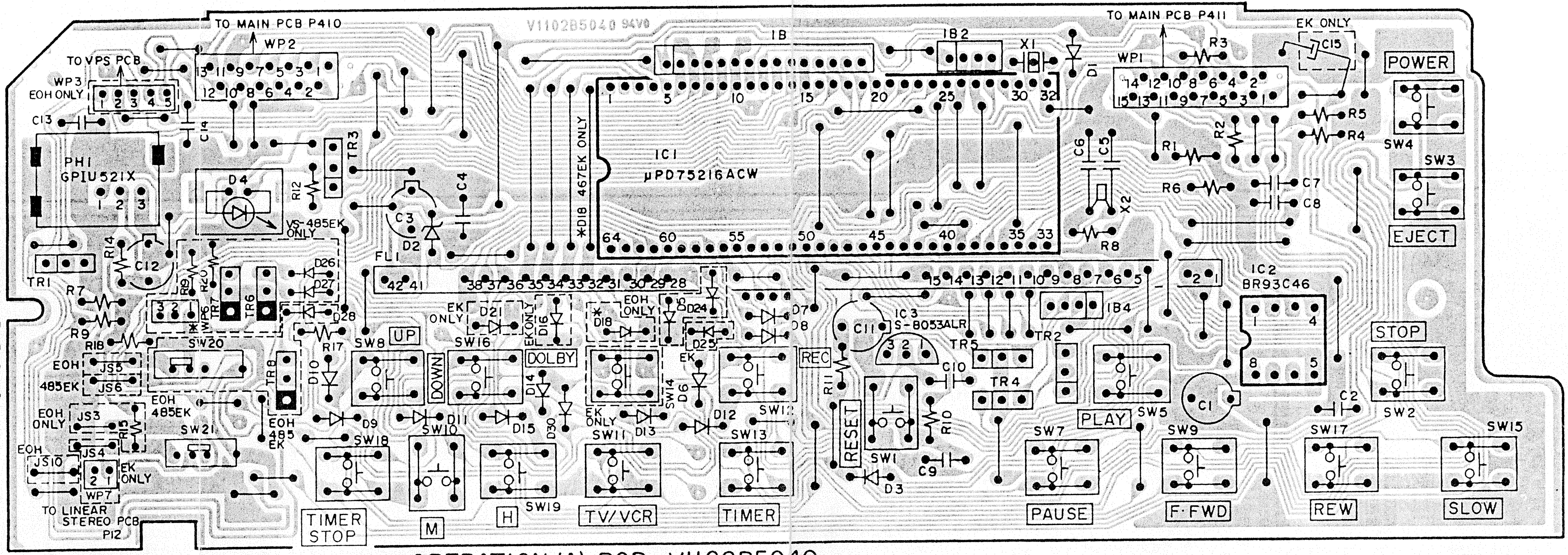
B C E
■ ● ● = PNP TRANSISTOR

B C E
● ● ● = NPN TRANSISTOR


1
2
3
4
5
6
A
EE LEVEL
PB LEVEL VR606
VR605
FL602
IC602 AN3247K
TP602 CCD
TP601 CCD
TP603 W.CLIP
VR601
VR603 FREQ
VR602 DEV
VR604 W.C
CCD LEVEL
FL601
IC601 MSM 6963RS
TP605 VIDEO GND
EM,EOH, EOG ONLY
EM ONLY
TR671
TR672
TP606 ENVE
DL701
IC701 LA7330
FL701
X701
EM,EOH, EOG ONLY
EK ONLY
WF771 EM,EOG ONLY TO P/S AUTO PCB P101
SECAM/PAL
VIDEO OUT
EE
V.P
PICTURE
V.SYNC
C.SYNC
REC.Y
PB.Y
REC
SP
C.SYNC
NC
IDL 12V
VIDEO IN
GND
PB.C
C.MUTE
REC CHROMA
SECAM/PAL
PB 5V
IDL 5V
C.SWP
FSC
TRICK
GND
GND
GND
㉘ ㉗ ㉖ ㉕ ㉔ ㉓
㉒ ㉑ ⑳ ⑲ ⑱
⑰
⑯ ⑮ ⑭ ⑬ ⑫
⑪
⑩
⑨ ⑧ ⑦
⑥
⑤ ④
③ ② ①
TO MAIN PCB

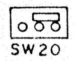
VIDEO PCB VI102A501B(JI)


EXCEPT EM
JS671
JS672

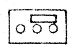

TO MAIN PCB P410
WP2
V1102B5040 94V0
IB
IB2
X1
D1
TO MAIN PCB P411
R3
EK ONLY
C15
POWER
TO VPS PCB
WP3
EOH ONLY
C13
C14
PH1
GP1U521X
D4
TR3
R12
VS-485EK ONLY
C3
C4
D2
∗D18 467EK ONLY
IC1
μPD75216ACW
WP1
R5
R4
SW4
SW3
R1
R2
R6
C6
C5
X2
C7
C8
EJECT
R8
TR1
R14
C12
R7
R9
R18
R19
R20
WP5
TR7
TR6
D26
D27
D28
R17
FL1
D21
D16
D18
D24
D25
D7
D8
IC3
S-8053ALR
C11
TR5
TR2
TR4
IB4
IC2
BR93C46
STOP
SW2
C2
C1
SW20
JS5
JS6
JS3
JS4
JS10
R15
SW21
EOH
485EK
EK ONLY
WP7
TO LINEAR STEREO PCB P12
∗WP6 TO LINEAR STEREO PCB P13
TR8
D10
SW8
UP
DOWN
SW16
DOLBY
D14
D30
D9
SW18
SW10
D11
D15
D13
SW11
SW14
D6
D12
SW13
SW12
REC
R11
RESET
SW1
D3
C9
C10
R10
SW7
PLAY
SW5
SW9
SW17
SW15
TIMER STOP
M
H
SW19
TV/VCR
TIMER
PAUSE
F·FWD
REW
SLOW

OPERATION (A) PCB V1102B5040

VPS AUTO REC } (EOH)
ON ← → OFF
FM ← → NICAM (485 EK)

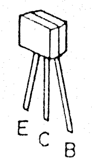

SW20

MESECAM ← → PAL (EOH)
MONITOR SELECTOR } (EK)
EXT ← → VCR

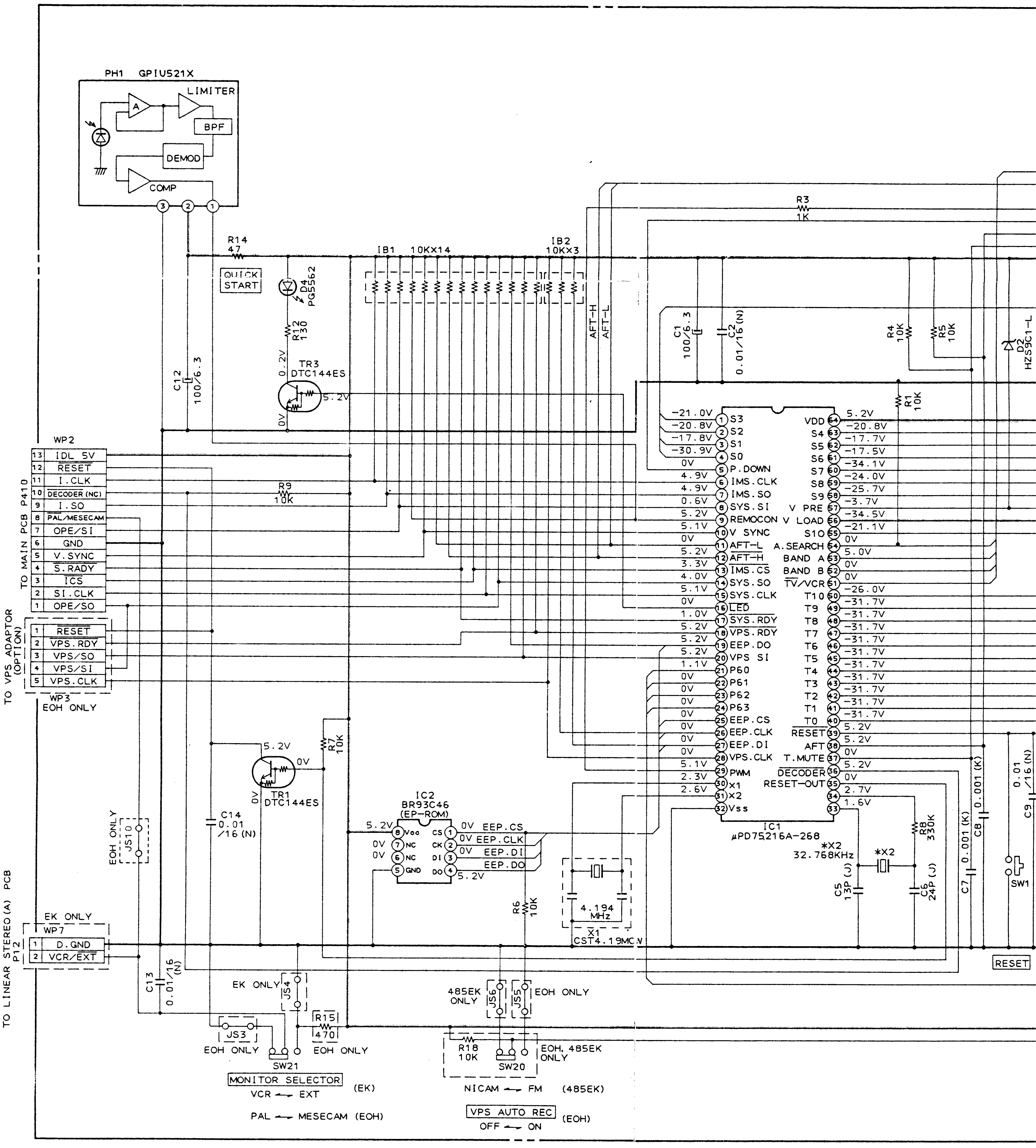

SW21

B
■ • • = PNP TRANSISTOR

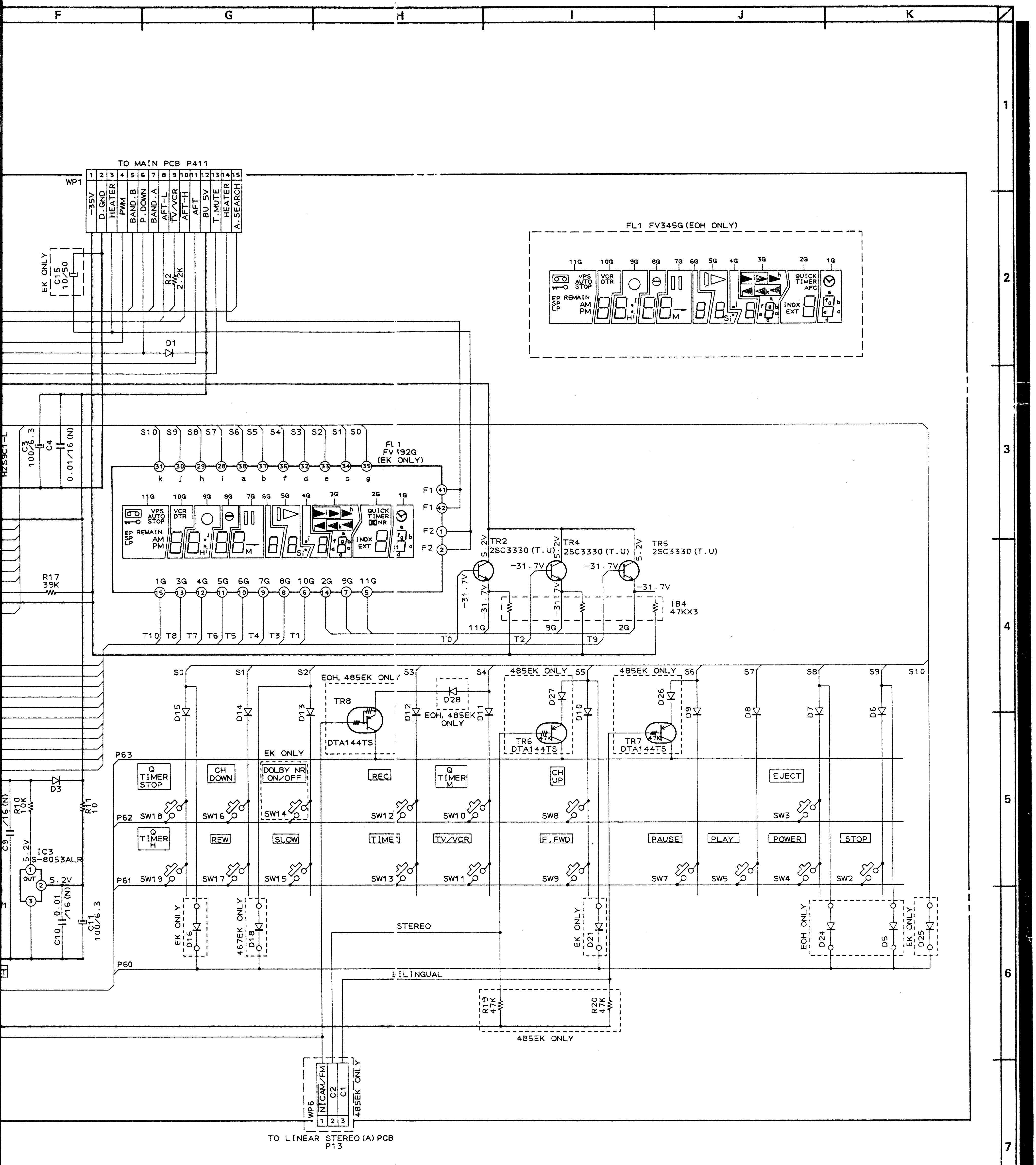
B
• • • = NPN TRANSISTOR



2SC3330
DTC114ES
DTA144TS


PH1 GP1U521X
LIMITER
A
BPF
DEMOD
COMP
R14 47
QUICK START
D4 PG5562
R12 130
TR3 DTC144ES
0.2V
5.2V
0V
C12 100/6.3
IB1 10KX14
IB2 10KX3
AFT-H
AFT-L
R3 1K
C1 100/6.3
C2 0.01/16(N)
R4 10K
R5 10K
D2 HZS9C1-L
R1 10K
WP2
TO MAIN PCB P410
13 IDL 5V
12 RESET
11 I.CLK
10 DECODER (NC)
9 I.SO
8 PAL/MESECAM
7 OPE/SI
6 GND
5 V.SYNC
4 S.RADY
3 ICS
2 SI.CLK
1 OPE/SO
R9 10K
TO VPS ADAPTOR (OPTION)
1 RESET
2 VPS.RDY
3 VPS/SO
4 VPS/SI
5 VPS.CLK
WP3 EOH ONLY
1 S3 -21.0V
2 S2 -20.8V
3 S1 -17.8V
4 S0 -30.9V
5 P.DOWN 0V
6 IMS.CLK 4.9V
7 IMS.SO 4.9V
8 SYS.SI 0.6V
9 REMOCON 5.2V
10 V SYNC 5.1V
11 AFT-L 0V
12 AFT-H 5.2V
13 IMS.CS 3.3V
14 SYS.SO 4.0V
15 SYS.CLK 5.1V
16 LED 0V
17 SYS.RDY 1.0V
18 VPS.RDY 5.2V
19 EEP.DO 5.2V
20 VPS SI 5.2V
21 P60 1.1V
22 P61 0V
23 P62 0V
24 P63 0V
25 EEP.CS 0V
26 EEP.CLK 0V
27 EEP.DI 0V
28 VPS.CLK 0V
29 PWM 5.1V
30 X1 2.3V
31 X2 2.6V
32 Vss
64 VDD 5.2V
63 S4 -20.8V
62 S5 -17.7V
61 S6 -17.5V
60 S7 -34.1V
59 S8 -24.0V
58 S9 -25.7V
57 V PRE -3.7V
56 V LOAD -34.5V
55 S10 -21.1V
54 A.SEARCH 0V
53 BAND A 5.0V
52 BAND B 0V
51 TV/VCR 0V
50 T10 -26.0V
49 T9 -31.7V
48 T8 -31.7V
47 T7 -31.7V
46 T6 -31.7V
45 T5 -31.7V
44 T4 -31.7V
43 T3 -31.7V
42 T2 -31.7V
41 T1 -31.7V
40 T0 -31.7V
39 RESET 5.2V
38 AFT 5.2V
37 T.MUTE 0V
36 DECODER 5.2V
35 RESET-OUT 0V
34 2.7V
33 1.6V
IC1 μPD75216A-268
*X2 32.768KHz
*X2
R8 330K
C5 13P(J)
C6 24P(J)
C7 0.001(K)
C8 0.001(K)
C9 0.01/16(N)
SW1
RESET
TR1 DTC144ES
5.2V
0V
0V
R7 10K
C14 0.01/16(N)
IC2 BR93C46 (EP-ROM)
5.2V 8 Vcc
0V 7 NC
0V 6 NC
5 GND
CS 1 0V EEP.CS
CK 2 0V EEP.CLK
DI 3 0V EEP.DI
DO 4 EEP.DO 5.2V
4.194 MHz
X1 CST4.19MCW
R6 10K
EOH ONLY
JS10
TO LINEAR STEREO(A) PCB P12
EK ONLY
WP7
1 D.GND
2 VCR/EXT
C13 0.01/16(N)
EK ONLY
JS4
R15 470
JS3
EOH ONLY
EOH ONLY
SW21
MONITOR SELECTOR
VCR ⟷ EXT (EK)
PAL ⟷ MESECAM (EOH)
485EK ONLY
JS6
JS5
EOH ONLY
R18 10K
SW20
EOH, 485EK ONLY
NICAM ⟷ FM (485EK)
VPS AUTO REC
OFF ⟷ ON (EOH)

OPERATION (A) PCB V1102B5040


F
G
H
I
J
K
1
2
3
4
5
6
7
TO MAIN PCB P411
WP1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
-35V
D.GND
HEATER
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BU 5V
T.MUTE
HEATER
A.SEARCH
EK ONLY
C15
10/50
R2
2.2K
D1
FL1 FV345G (EOH ONLY)
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
VPS
AUTO
STOP
VCR
DTR
QUICK
TIMER
AFC
EP
SP
LP
REMAIN
AM
PM
INDX
EXT
C3
100/6.3
C4
0.01/16 (N)
H2S9C1-L
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S0
FL 1
FV 192G
(EK ONLY)
31
30
29
28
38
37
36
32
33
34
35
k
j
h
i
a
b
f
d
e
c
g
F1
F1
F2
F2
41
42
1
2
NR
R17
39K
1G
3G
4G
5G
6G
7G
8G
10G
2G
9G
11G
15
13
12
11
10
9
8
6
14
7
5
T10
T8
T7
T6
T5
T4
T3
T1
T0
T2
T9
5.2V
TR2
2SC3330 (T.U)
TR4
2SC3330 (T.U)
TR5
2SC3330 (T.U)
-31.7V
-31.7V
-31.7V
-31.7V
-31.7V
-31.7V
IB4
47K×3
11G
9G
2G
EOH, 485EK ONLY
485EK ONLY
485EK ONLY
TR8
DTA144TS
D28
EOH, 485EK ONLY
TR6
DTA144TS
TR7
DTA144TS
47K
D15
D14
D13
D12
D11
D27
D10
D26
D9
D8
D7
D6
P63
EK ONLY
Q
TIMER
STOP
CH
DOWN
DOLBY NR
ON/OFF
REC
Q
TIMER
M
CH
UP
EJECT
SW18
SW16
SW14
SW12
SW10
SW8
SW3
P62
Q
TIMER
H
REW
SLOW
TIME
TV/VCR
F.FWD
PAUSE
PLAY
POWER
STOP
P61
SW19
SW17
SW15
SW13
SW11
SW9
SW7
SW5
SW4
SW2
D3
R10
10K
R11
10
C9
/16 (N)
5.2V
IC3
S-8053ALR
OUT
1
2
3
5.2V
C10
0.01
/16 (N)
C11
100/6.3
EK ONLY
D16
467EK ONLY
D18
STEREO
EK ONLY
D21
EOH ONLY
D24
D5
EK ONLY
D25
P60
BILINGUAL
R19
47K
R20
47K
485EK ONLY
WP6
NICAM/FM
C2
C1
485EK ONLY
1 2 3
TO LINEAR STEREO (A) PCB
P13

NOTE

UNLESS OTHERWISE SPECIFIED

ALL DIODES ARE 1SS131T

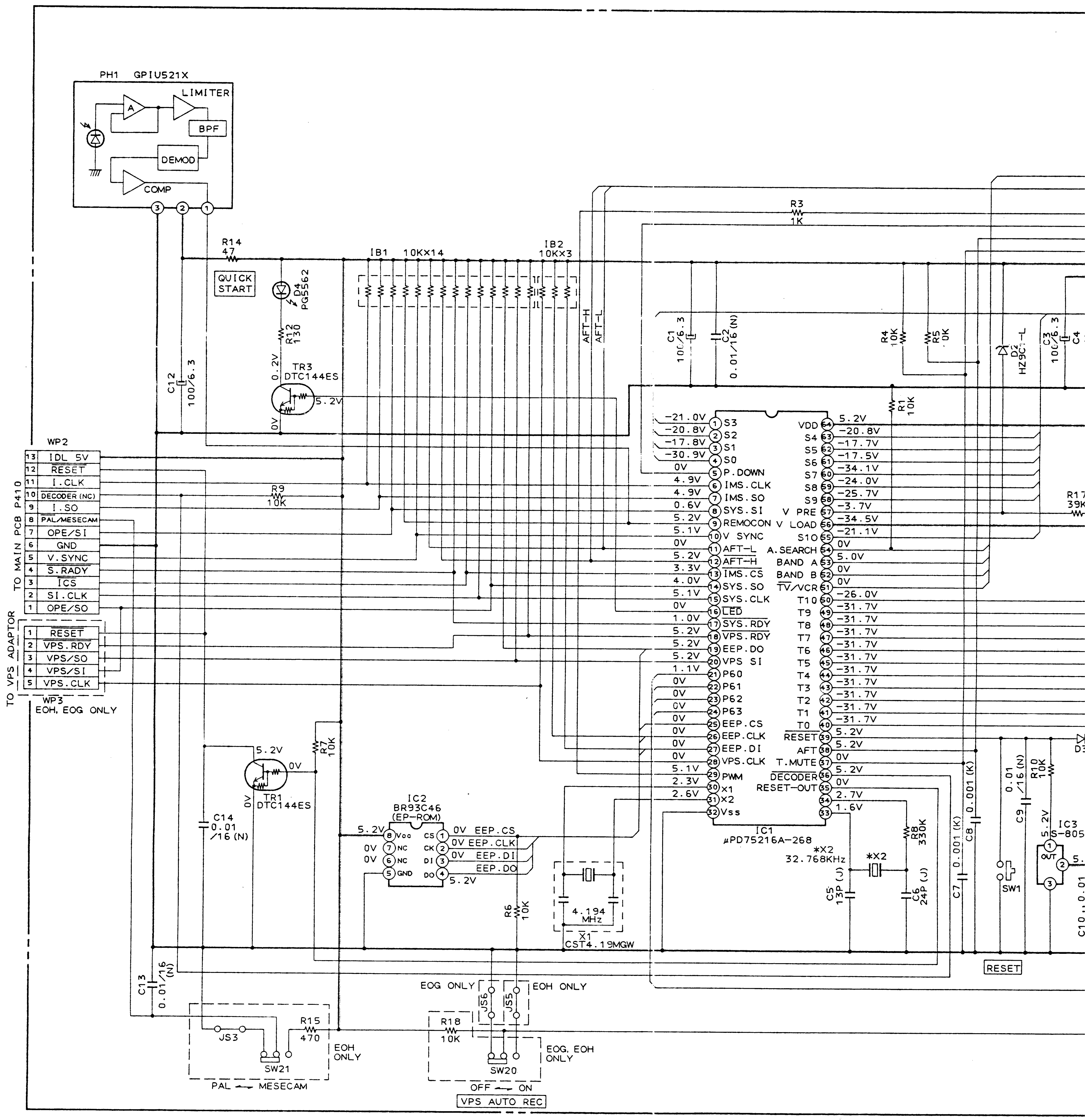
ALL RESISTERS IN OHMS 1/6 W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL INDUCTORS IN μH (K)

: B (POWER SUPPLY) LINE

INDICATED VOLTAGES ARE MEASURED
IN STOP (E-E) MODE, WITH TAPE LOADED.

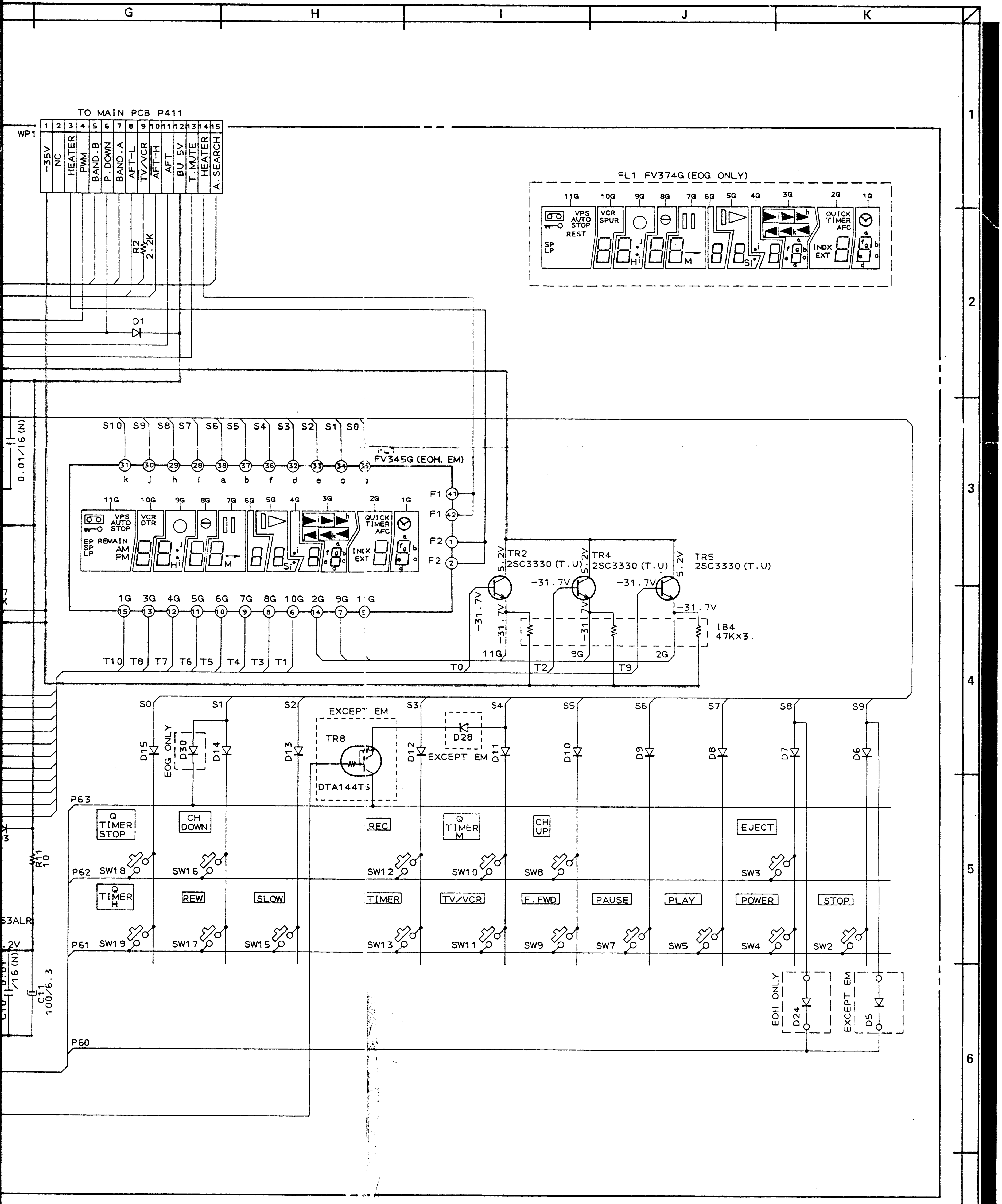
OPERATION (A)
SCHEMATIC DIAGRAM

NO. 22-7 V110221M


PH1 GPIU521X
LIMITER
A
BPF
DEMOD
COMP
R14 47
QUICK START
D4 PG5562
R12 130
TR3 DTC144ES
0.2V
0V
5.2V
C12 100/6.3
IB1 10K×14
IB2 10K×3
AFT-H
AFT-L
R3 1K
C1 10/6.3
C2 0.01/16 (N)
R4 10K
R5 10K
D2 HZ9C1-L
C3 10/6.3
C4
R1 10K
WP2
13 IDL 5V
12 RESET
11 I.CLK
10 DECODER (NC)
9 I.SO
8 PAL/MESECAM
7 OPE/SI
6 GND
5 V.SYNC
4 S.RADY
3 ICS
2 SI.CLK
1 OPE/SO
TO MAIN PCB P410
R9 10K
1 RESET
2 VPS.RDY
3 VPS/SO
4 VPS/SI
5 VPS.CLK
TO VPS ADAPTOR
WP3 EOH, EOG ONLY
−21.0V 1 S3
−20.8V 2 S2
−17.8V 3 S1
−30.9V 4 S0
0V 5 P.DOWN
4.9V 6 IMS.CLK
4.9V 7 IMS.SO
0.6V 8 SYS.SI
5.2V 9 REMOCON
5.1V 10 V SYNC
0V 11 AFT-L
5.2V 12 AFT-H
3.3V 13 IMS.CS
4.0V 14 SYS.SO
5.1V 15 SYS.CLK
0V 16 LED
1.0V 17 SYS.RDY
5.2V 18 VPS.RDY
5.2V 19 EEP.DO
5.2V 20 VPS SI
1.1V 21 P60
0V 22 P61
0V 23 P62
0V 24 P63
0V 25 EEP.CS
0V 26 EEP.CLK
0V 27 EEP.DI
0V 28 VPS.CLK
5.1V 29 PWM
2.3V 30 X1
2.6V 31 X2
32 Vss
VDD 64 5.2V
S4 63 −20.8V
S5 62 −17.7V
S6 61 −17.5V
S7 60 −34.1V
S8 59 −24.0V
S9 58 −25.7V
V PRE 57 −3.7V
V LOAD 56 −34.5V
S10 55 −21.1V
A.SEARCH 54 0V
BAND A 53 5.0V
BAND B 52 0V
TV/VCR 51 0V
T10 50 −26.0V
T9 49 −31.7V
T8 48 −31.7V
T7 47 −31.7V
T6 46 −31.7V
T5 45 −31.7V
T4 44 −31.7V
T3 43 −31.7V
T2 42 −31.7V
T1 41 −31.7V
T0 40 −31.7V
RESET 39 5.2V
AFT 38 5.2V
T.MUTE 37 0V
DECODER 36 5.2V
RESET-OUT 35 0V
34 2.7V
33 1.6V
IC1 μPD75216A-268
R17 39K
TR1 DTC144ES
5.2V
0V
R7 10K
C14 0.01/16 (N)
IC2 BR93C46 (EP-ROM)
5.2V 8 Vcc
0V 7 NC
0V 6 NC
5 GND
CS 1 0V EEP.CS
CK 2 0V EEP.CLK
DI 3 0V EEP.DI
DO 4 EEP.DO 5.2V
R6 10K
4.194 MHz
X1 CST4.19MGW
*X2 32.768KHz
*X2
C5 13P (J)
C6 24P (J)
R8 330K
C7 0.001 (K)
C8 0.001 (K)
C9 0.01/16 (N)
R10 10K
5.2V
IC3 S-805
SW1
C10 0.01
RESET
C13 0.01/16 (N)
EOG ONLY
EOH ONLY
JS6
JS5
JS3
R15 470
EOH ONLY
SW21
PAL — MESECAM
R18 10K
SW20
EOG, EOH ONLY
OFF — ON
VPS AUTO REC

OPERATION (B) PCB V1102B5050

www.manualscenter.com



G
H
I
J
K
1
2
3
4
5
6
TO MAIN PCB P411
WP1
-35V
NC
HEATER
PWM
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BU 5V
T.MUTE
HEATER
A.SEARCH
R2 2.2K
D1
FL1 FV374G (EOG ONLY)
FV345G (EOH, EM)
VPS AUTO STOP REST
VCR SPUR
QUICK TIMER AFC
INDX EXT
SP LP
VPS AUTO STOP
VCR DTR
EP REMAIN SP AM LP PM
S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S0
F1
F2
1G 3G 4G 5G 6G 7G 8G 10G 2G 9G 11G
T10 T8 T7 T6 T5 T4 T3 T1 T0 T2 T9
TR2 2SC3330 (T.U)
TR4 2SC3330 (T.U)
TR5 2SC3330 (T.U)
5.2V
-31.7V
IB4 47K×3
0.01/16 (N)
EXCEPT EM
TR8
DTA144TS
D28
EXCEPT EM
EOG ONLY
D30
D15 D14 D13 D12 D11 D10 D9 D8 D7 D6
P63
P62
P61
P60
Q TIMER STOP
CH DOWN
REC
Q TIMER M
CH UP
EJECT
Q TIMER H
REW
SLOW
TIMER
TV/VCR
F.FWD
PAUSE
PLAY
POWER
STOP
SW18 SW16 SW12 SW10 SW8 SW3
SW19 SW17 SW15 SW13 SW11 SW9 SW7 SW5 SW4 SW2
EOH ONLY
D24
EXCEPT EM
D5
R11 10
C11 100/6.3
0.01/16 (N)
53ALR
.2V

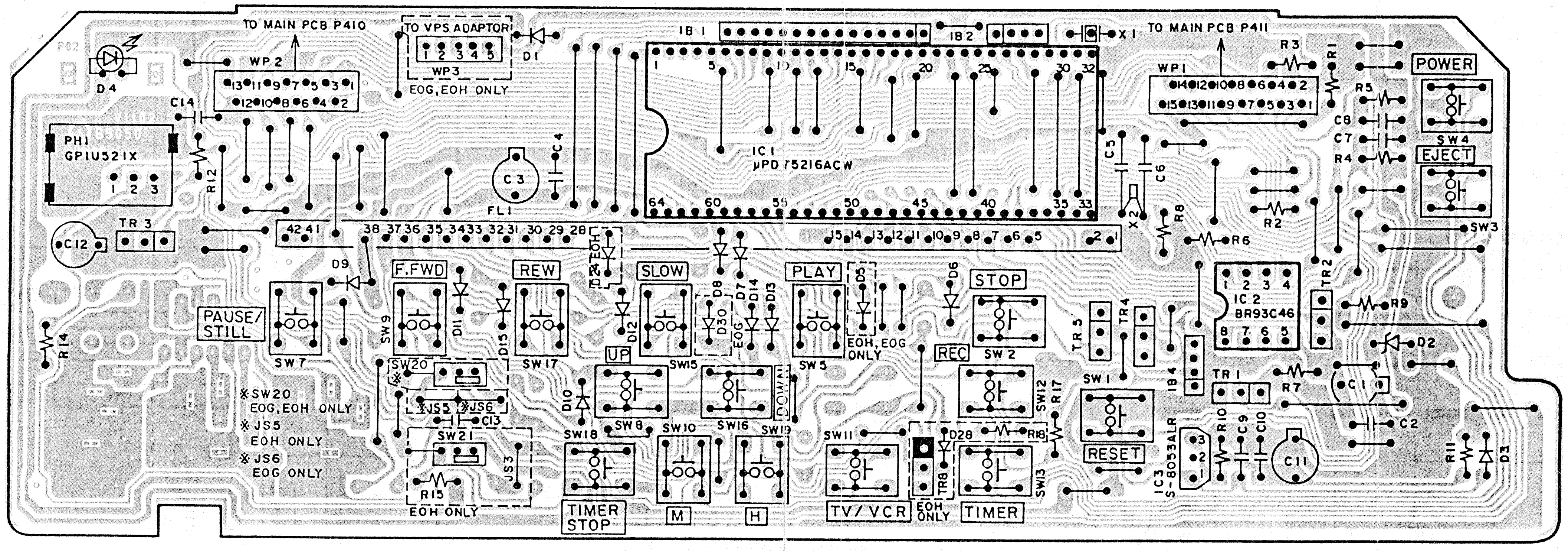
NOTE

UNLESS OTHERWISE SPECIFIED
ALL DIODES ARE 1SS131T
ALL RESISTERS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL INDUCTORS IN μH (K)

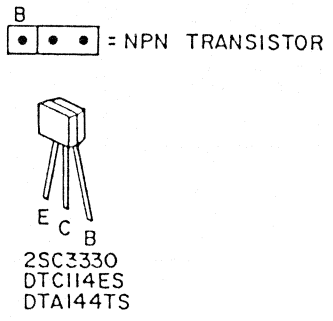
━━━ : B (POWER SUPPLY) LINE

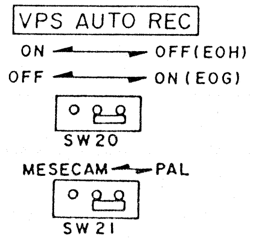
INDICATED VOLTAGES ARE MEASURED
IN STOP (E-E) MODE, WITH TAPE LOADED.

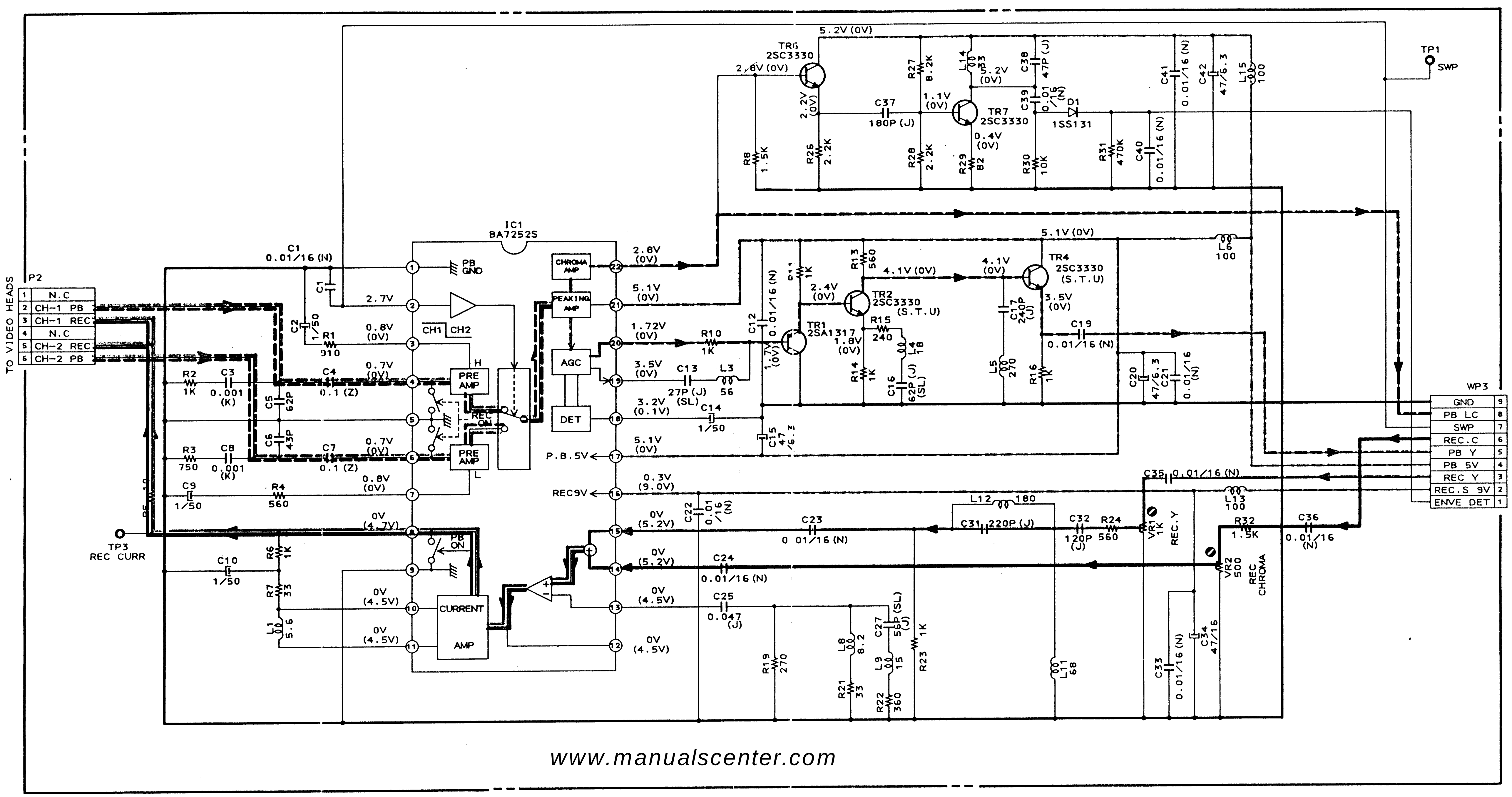
OPERATION (B)
SCHEMATIC DIAGRAM
NO. 22-8 V110222M


TO MAIN PCB P410
TO VPS ADAPTOR
WP3
EOG, EOH ONLY
WP 2
D1
IB 1
IB 2
X 1
TO MAIN PCB P411
WP 1
R3
R1
POWER
SW4
EJECT
SW3
R5
C8
C7
R4
D4
C14
PH1
GP1U521X
R12
C3
C4
FL1
IC 1
μPD75216ACW
C5
C6
X2
R8
R2
R6
TR 3
C12
D9
PAUSE/
STILL
SW7
F.FWD
SW9
D11
REW
D15
SW17
D24
EOH
SLOW
D12
D8
D30
EOG
D7
D14
D13
PLAY
D5
EOH, EOG
ONLY
D6
STOP
SW 2
TR 5
TR 4
IC 2
BR93C46
TR 2
R9
D2
R14
※SW20
EOG, EOH ONLY
※JS5
EOH ONLY
※JS6
EOG ONLY
SW20
※JS5
※JS6
C13
SW21
JS3
R15
EOH ONLY
UP
SW15
D10
SW8
SW18
SW10
SW16
DOWN
SW19
SW 5
REC
SW12
R17
SW11
D28
R18
TR8
EOH
ONLY
SW13
SW 1
RESET
IB4
TR 1
R7
C 1
C2
R10
C9
C10
C11
IC3
S-8053ALR
R11
D3
TIMER
STOP
M
H
TV/VCR
TIMER

OPERATION (B) PCB V1102B5050 (J1)


B
= NPN TRANSISTOR
E
C
B
2SC3330
DTC114ES
DTA144TS


VPS AUTO REC
ON
OFF (EOH)
OFF
ON (EOG)
SW 20
MESECAM
PAL
SW 21


TO VIDEO HEADS
P2
1 N.C
2 CH-1 PB
3 CH-1 REC
4 N.C
5 CH-2 REC
6 CH-2 PB
IC1
BA7252S
C1
0.01/16 (N)
PB GND
CH1 CH2
PRE AMP
REC ON
PB ON
CHROMA AMP
PEAKING AMP
AGC
DET
CURRENT AMP
P.B.5V
REC9V
R1 910
R2 1K
R3 750
R4 560
R5 10
R6 1K
R7 33
L1 5.6
C2 1/50
C3 0.001 (K)
C4 0.1 (Z)
C5 62P
C6 43P
C7 0.1 (Z)
C8 0.001 (K)
C9 1/50
C10 1/50
TP3
REC CURR
2.8V (0V)
5.1V (0V)
1.72V (0V)
3.5V (0V)
3.2V (0.1V)
0.3V (9.0V)
0V (5.2V)
0V (4.5V)
0V (4.7V)
0.7V (0V)
0.8V (0V)
2.7V
R10 1K
C13 27P (J) (SL)
L3 56
C14 1/50
C15 47/6.3
C12 0.01/16 (N)
TR1 2SA1317
TR2 2SC3330 (S.T.U)
TR4 2SC3330 (S.T.U)
TR6 2SC3330
TR7 2SC3330
R8 1.5K
R11 1K
R13 560
R14 1K
R15 240
R16 1K
L4 18
L5 270
C16 62P (J) (SL)
C17 240P (J)
C19 0.01/16 (N)
C20 47/6.3
C21 0.01/16 (N)
L6 100
5.1V (0V)
4.1V (0V)
2.4V (0V)
1.8V (0V)
3.5V (0V)
5.2V (0V)
2.8V (0V)
2.2V (0V)
1.1V (0V)
0.4V (0V)
R26 2.2K
R27 8.2K
R28 2.2K
R29 82
R30 10K
R31 470K
L14 33
C37 180P (J)
C38 47P (J)
C39 0.01/16 (N)
C40 0.01/16 (N)
C41 0.01/16 (N)
C42 47/6.3
L15 100
D1 1SS131
TP1 SWP
C22 0.01/16 (N)
C23 0.01/16 (N)
C24 0.01/16 (N)
C25 0.047 (J)
R19 270
L8 8.2
R21 33
L9 15
R22 360
C27 56P (SL) (J)
R23 1K
L11 68
L12 180
C31 220P (J)
C32 120P (J)
R24 560
VR1 1K REC.Y
R32 1.5K
VR2 500 REC CHROMA
C33 0.01/16 (N)
C34 47/16
C35 0.01/16 (N)
L13 100
C36 0.01/16 (N)
WP3
GND 9
PB LC 8
SWP 7
REC.C 6
PB Y 5
PB 5V 4
REC Y 3
REC.S 9V 2
ENVE DET 1
TO MAIN PCB P203

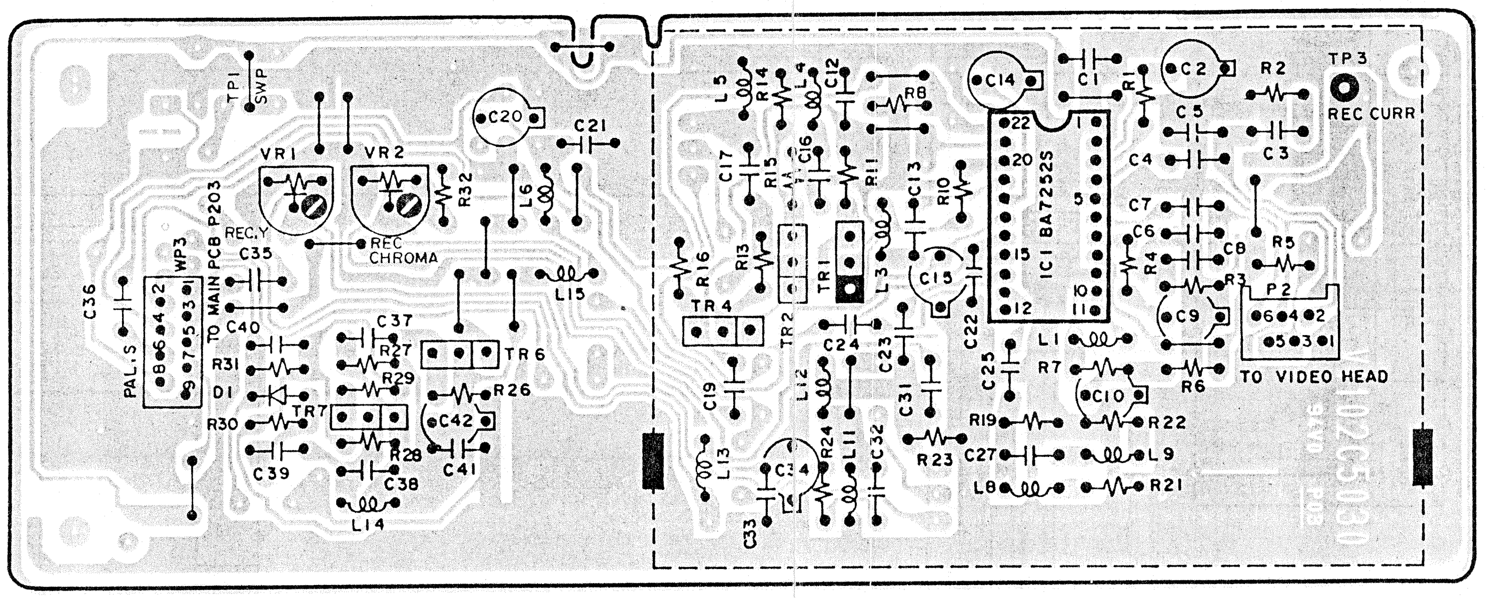
PRE AMP (1) PCB V1102C5030

INDICATED VOLTAGES ARE MEASURED IN
PB MODE.
( ) REC MODE.

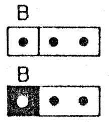
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL INDUCTORS IN μH (K)

-·-·-·- :POWER SUPPLY LINE (PB, REC ONLY)
——— :REC CHROMA SIGNAL
——— :REC Y SIGNAL
– – – :PB CHROMA SIGNAL
-·-·- :PB Y SIGNAL

VS-422EOH
VS-425EM·EOG·EOH
VS-427EK·485EK
PRE AMP (1)
SCHEMATIC DIAGRAM
NO.22-9 V110223M

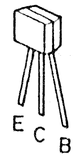

TP1 SWP
VR1
VR2
C20
C21
R32
L6
REC.Y
REC CHROMA
C35
TO MAIN PCB P203
WP3
C36
PAL.S
C40
R31
D1
R30
C37
R27
R29
TR6
TR7
C42
R26
R28
C41
C39
C38
L14
L15
L5
R14
L4
C12
R8
C17
R15
C16
R11
C13
R10
R16
R13
TR1
TR2
TR4
L3
C15
C22
C24
C23
C19
L12
C31
C25
C14
C1
R1
C2
R2
TP3
REC CURR
C5
C3
C4
IC1 BA7252S
C7
C6
C8
R5
R4
R3
P2
C9
TO VIDEO HEAD
L1
R7
C10
R6
R19
R22
R23
C27
L9
L8
R21
R24
L11
C32
C34
L13
C33
V1102C5030
SKVD P.C.B

PRE AMP (1) PCB V1102C5030J2

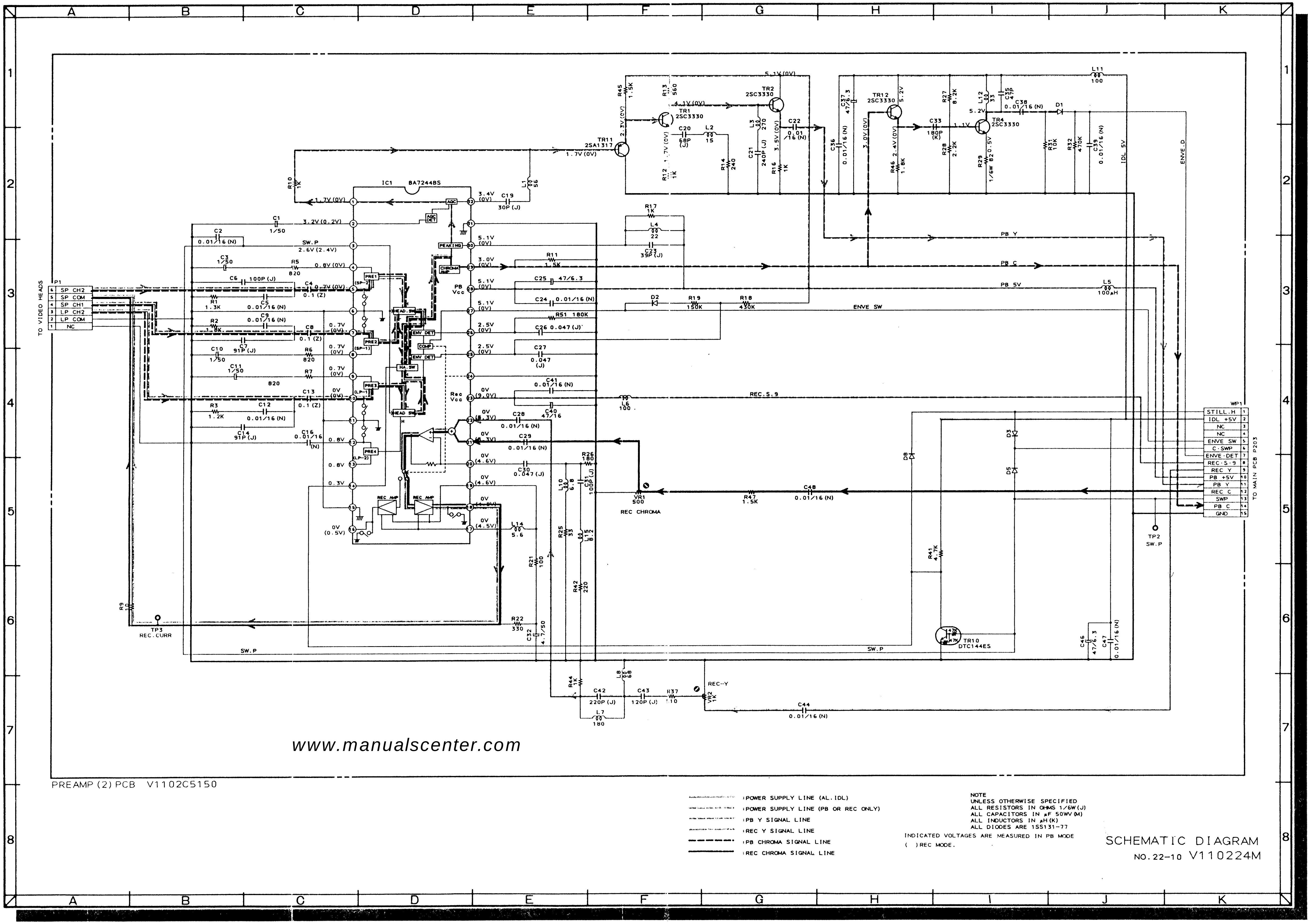


= NPN TRANSISTOR

= PNP TRANSISTOR



2SA1317
2SC3330


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TO VIDEO HEADS
P1
6 SP CH2
5 SP COM
4 SP CH1
3 LP CH2
2 LP COM
1 NC
IC1 BA7244BS
AGC
AGC DET
PEAKING
CHROMA AMP
PRE1
PRE2
PRE3
PRE4
(SP-2)
(SP-1)
(LP-1)
(LP-2)
HEAD SW
ENV DET
COMP
HA.SW
REC AMP
PB Vcc
Rec Vcc
TR11 2SA1317
TR1 2SC3330
TR2 2SC3330
TR12 2SC3330
TR4 2SC3330
TR10 DTC144ES
D1
D2
D3
D5
D8
VR1 500 REC CHROMA
VR2 1K REC-Y
TP1
TP2 SW.P
TP3 REC.CURR
SW.P
PB Y
PB C
PB 5V
ENVE SW
ENVE.D
IDL 5V
REC.S.9
WP1
1 STILL.H
2 IDL +5V
3 NC
4 NC
5 ENVE SW
6 C.SWP
7 ENVE.DET
8 REC.S.9
9 REC Y
10 PB +5V
11 PB Y
12 REC C
13 SWP
14 PB C
15 GND
TO MAIN PCB P203

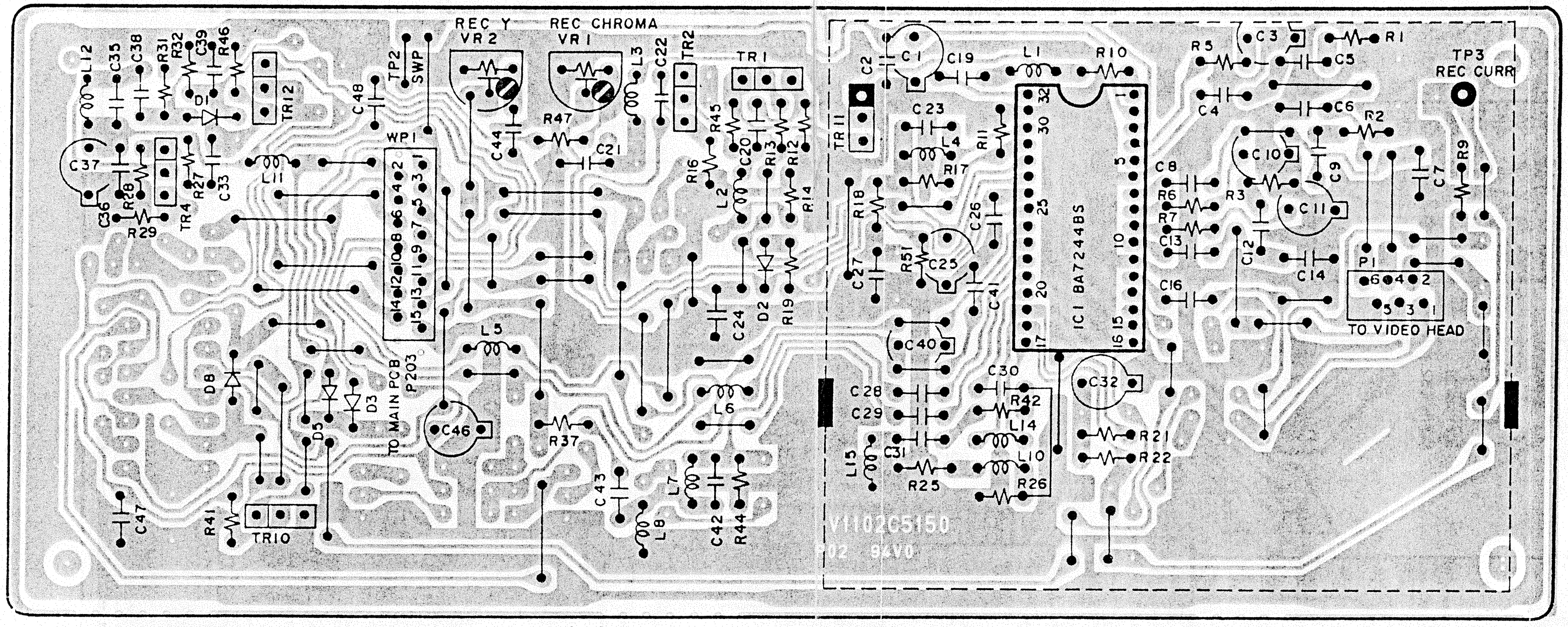
PREAMP (2) PCB V1102C5150

- :POWER SUPPLY LINE (AL. IDL)
- :POWER SUPPLY LINE (PB OR REC ONLY)
- :PB Y SIGNAL LINE
- :REC Y SIGNAL LINE
- :PB CHROMA SIGNAL LINE
- :REC CHROMA SIGNAL LINE

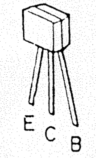
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(M)
ALL INDUCTORS IN μH(K)
ALL DIODES ARE 1SS131-77
INDICATED VOLTAGES ARE MEASURED IN PB MODE
( ) REC MODE.

SCHEMATIC DIAGRAM

NO.22-10 V110224M


REC Y
VR2
REC CHROMA
VR1
TP2
SWP
TP3
REC CURR
WP1
TO MAIN PCB
P203
TR1
TR2
TR4
TR10
TR11
TR12
IC1 BA7244BS
P1
TO VIDEO HEAD
L1
L2
L3
L4
L5
L6
L7
L8
L10
L11
L12
L14
L15
D1
D2
D3
D5
D8
R1
R2
R3
R5
R6
R7
R9
R10
R11
R12
R13
R14
R16
R17
R18
R19
R21
R22
R25
R26
R27
R28
R29
R31
R32
R37
R41
R42
R44
R45
R46
R47
R51
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C16
C19
C20
C21
C22
C23
C24
C25
C26
C27
C28
C29
C30
C31
C32
C33
C35
C36
C37
C38
C39
C40
C41
C42
C43
C44
C46
C47
C48
V1102C5150
P02 94V0

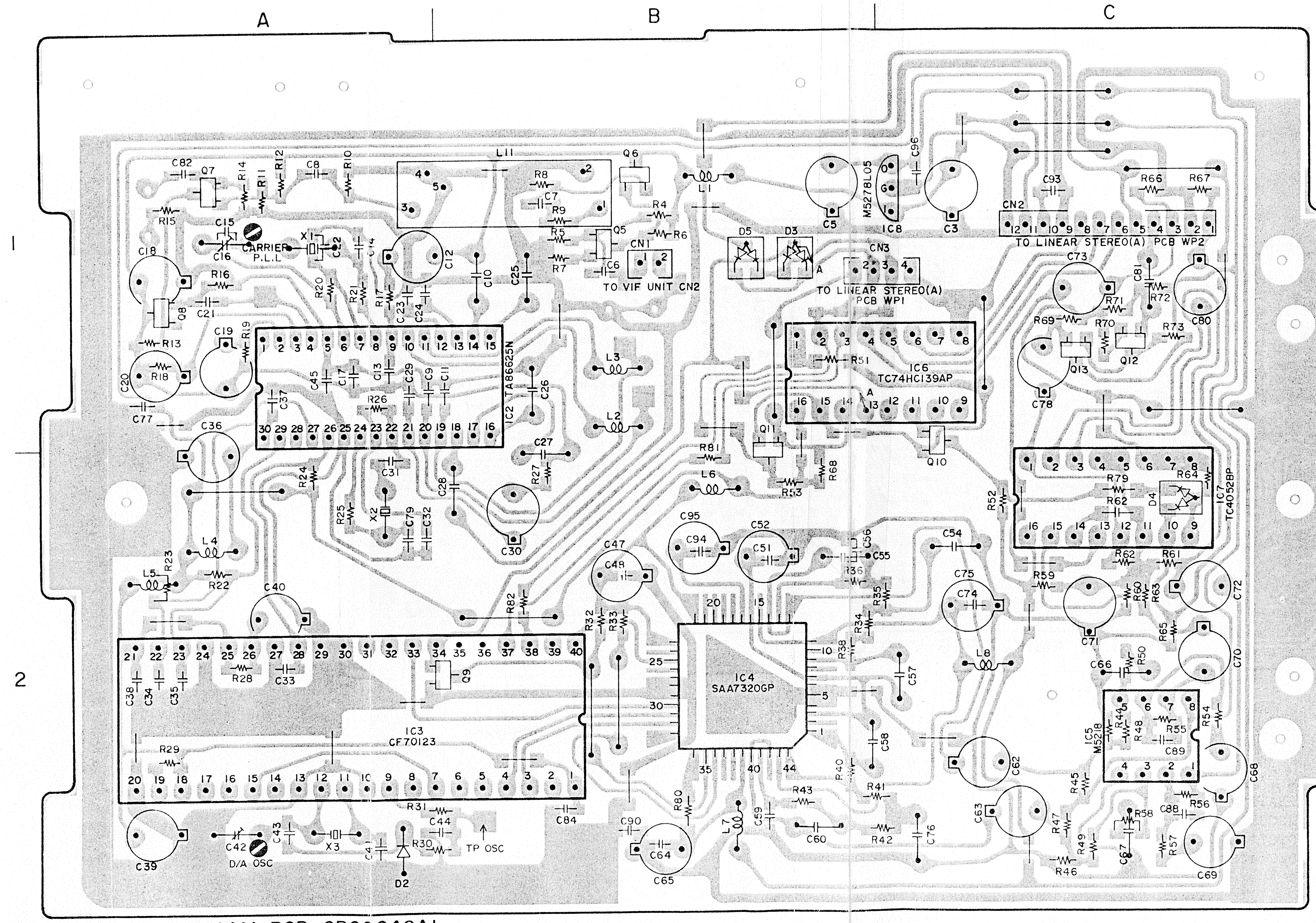
PRE AMP(2) PCB V1102C5150(J1)



2SA1317
2SC3330
DTC114ES
DTC144ES

B C E
[● ● ●] = NPN TRANSISTOR

B C E
[■ ● ●] = PNP TRANSISTOR


A
B
C
1
2
IC2 TA8662SN
IC3 CF70123
IC4 SAA7320GP
IC5 M5218
IC6 TC74HC139AP
IC7 TC4052BP
IC8 M5278L05
CARRIER P.L.L
TO VIF UNIT CN2
CN1
CN2
TO LINEAR STEREO(A) PCB WP2
CN3
TO LINEAR STEREO(A) PCB WP1
D/A OSC
TP OSC
X1
X2
X3
L1
L2
L3
L4
L5
L6
L7
L8
L11
D2
D3
D4
D5
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13

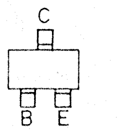
NICAM PCB 6B00640A1

LOCATION OF COMPONENTS

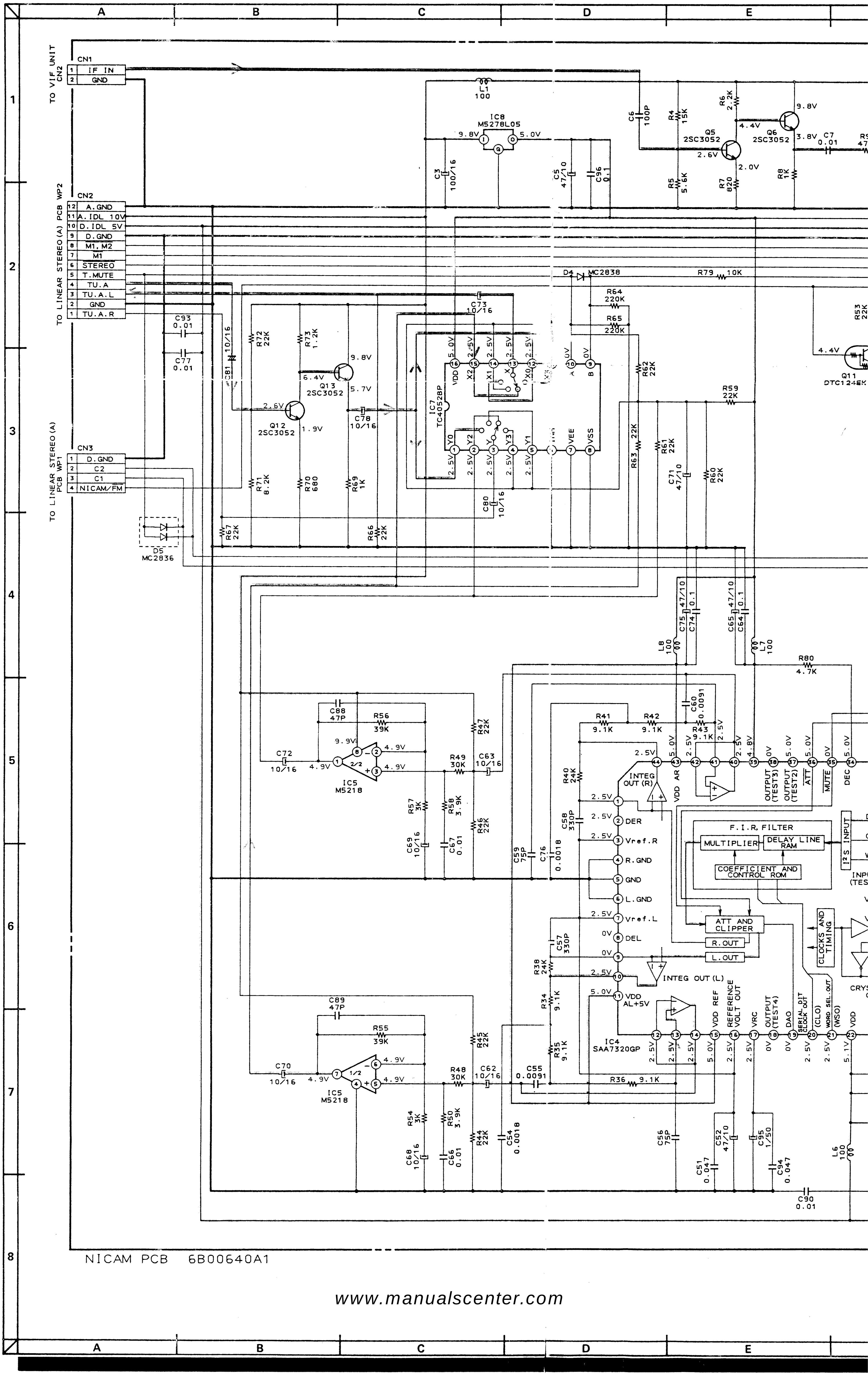
ICS
IC2........A,B1
IC3........A,B2
IC4........B2
IC5........C2
IC6........B,C1
IC7........C2

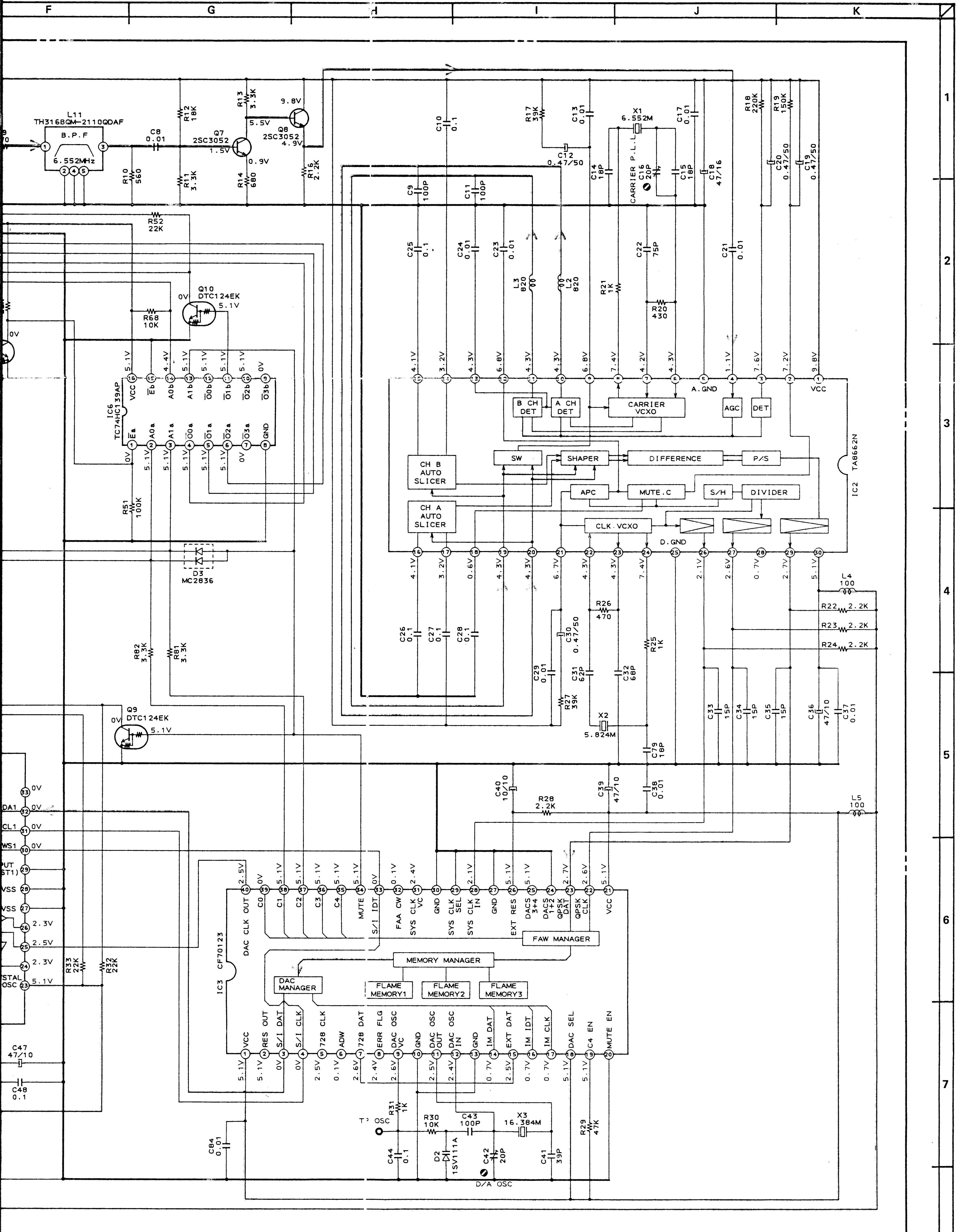
TRANSISTORS
Q5.........B1
Q6.........B1
Q7.........A1
Q8.........A1
Q9.........A2
Q10........C1
Q11........B1
Q12........C1
Q13........C1

CONNECTORS
CN1........B1
CN2........C2
CN3........B,C1



DTC124EK
DTC144EK
2SC3052


A
B
C
D
E
1
2
3
4
5
6
7
8
TO VIF UNIT CN2
CN1
IF IN
GND
TO LINEAR STEREO (A) PCB WP2
CN2
A.GND
A.IDL 10V
D.IDL 5V
D.GND
M1, M2
M1
STEREO
T.MUTE
TU.A
TU.A.L
GND
TU.A.R
TO LINEAR STEREO (A) PCB WP1
CN3
D.GND
C2
C1
NICAM/FM
D5
MC2836
L1
100
IC8
M5278L05
9.8V
5.0V
C3
100/16
C5
47/10
C96
0.1
C6
100P
R4
15K
R5
5.6K
R6
2.2K
Q5
2SC3052
2.6V
R7
820
2.0V
4.4V
Q6
2SC3052
3.8V
C7
0.01
R8
1K
D4
MC2838
R79 10K
R64
220K
R65
220K
C73
10/16
C93
0.01
C77
0.01
C81 10/16
R72
22K
R73
1.2K
Q13
2SC3052
6.4V
5.7V
Q12
2SC3052
2.6V
1.9V
C78
10/16
IC7
TC4052BP
VDD
X2
X1
X
X0
X3
A
B
Y0
Y2
Y
Y3
Y1
VEE
VSS
2.5V
0V
R62
22K
R59
22K
R63 22K
R61
22K
C71
47/10
R60
22K
R71
8.2K
R70
680
R69
1K
C80
10/16
R67
22K
R66
22K
R53
22K
4.4V
Q11
DTC124EK
C75 47/10
C74 0.1
L8
100
C65 47/10
C64 0.1
L7
100
R80
4.7K
C88
47P
R56
39K
9.9V
4.9V
IC5
M5218
2/2
C72
10/16
R49
30K
C63
10/16
R47
22K
R57
3K
R58
3.9K
C69
10/16
C67
0.01
R46
22K
C60
0.0091
R41
9.1K
R42
9.1K
R43
9.1K
R40
24K
C58
330P
C59
75P
C76
0.0018
INTEG OUT (R)
VDD AR
DER
Vref.R
R.GND
GND
L.GND
Vref.L
DEL
INTEG OUT (L)
VDD AL+5V
OUTPUT (TEST3)
OUTPUT (TEST2)
ATT
MUTE
DEC
F.I.R. FILTER
MULTIPLIER
DELAY LINE RAM
COEFFICIENT AND CONTROL ROM
I²S INPUT
INPU (TES
ATT AND CLIPPER
R.OUT
L.OUT
CLOCKS AND TIMING
CRYS
C57
330P
R38
24K
R34
9.1K
R35
9.1K
R36 9.1K
IC4
SAA7320GP
VDD REF
REFERENCE VOLT OUT
VRC
OUTPUT (TEST4)
DAO
SERIAL DIT CLOCK OUT (CLO)
WORD SEL OUT (WSO)
VDD
5.1V
C89
47P
R55
39K
IC5
M5218
1/2
C70
10/16
R48
30K
C62
10/16
C55
0.0091
R45
22K
R54
3K
R50
3.9K
C68
10/16
C66
0.01
R44
22K
C54
0.0018
C56
75P
C52
47/10
C95
1/50
C51
0.047
C94
0.047
L6
100
C90
0.01
NICAM PCB 6B00640A1

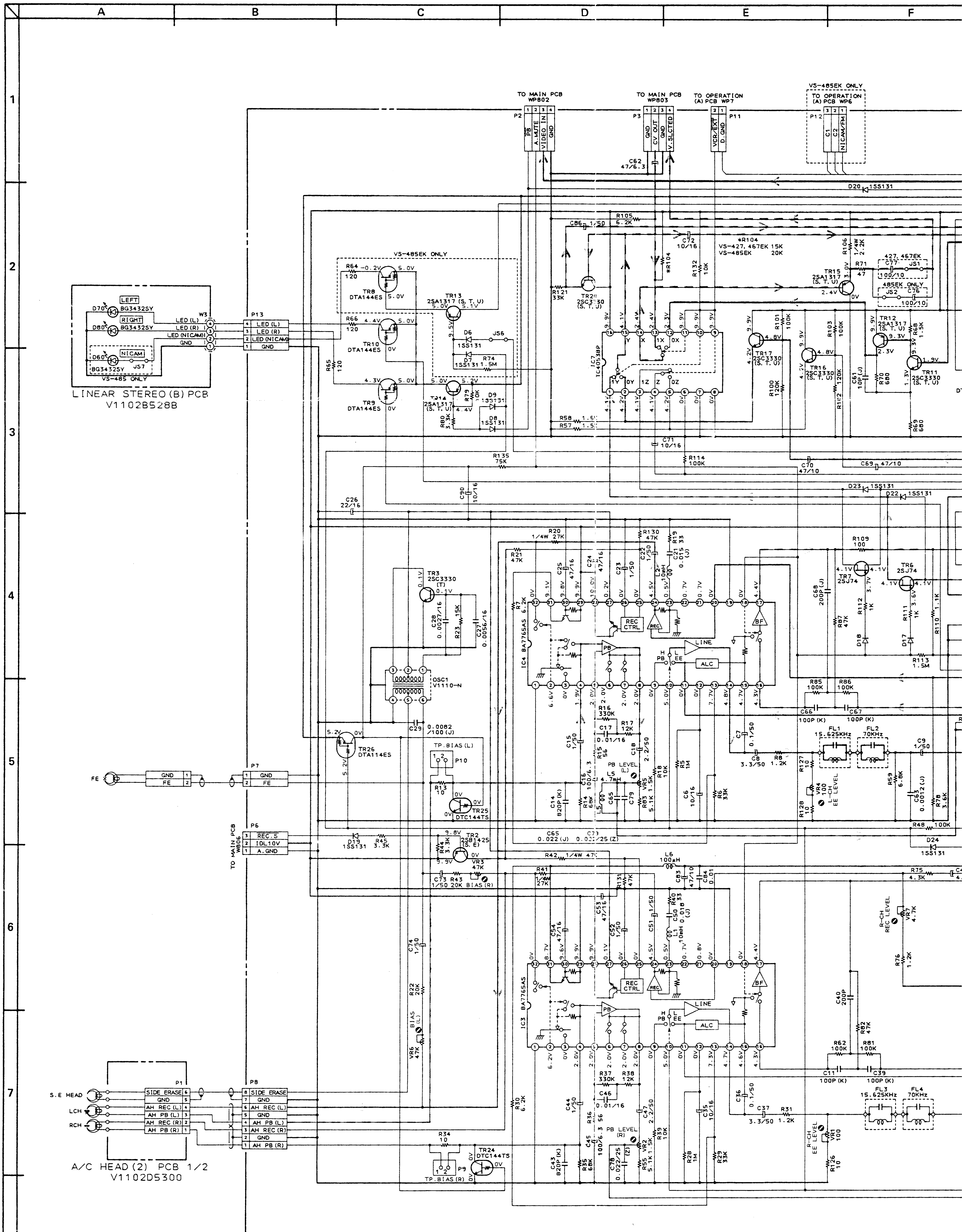

F
G
H
I
J
K
1
2
3
4
5
6
7
8
L11
TH316BQM-2110QDAF
B.P.F
6.552MHz
C8 0.01
R10 560
R12 18K
R11 3.3K
Q7 2SC3052
1.5V
0.9V
R14 680
R13 3.3K
5.5V
9.8V
Q8 2SC3052
4.9V
R16 2.2K
R52 22K
Q10 DTC124EK
0V
5.1V
R68 10K
IC6 TC74HC139AP
VCC
Eb
A0b
A1b
O0b
O1b
O2b
O3b
Ea
A0a
A1a
O0a
O1a
O2a
O3a
GND
R51 100K
D3 MC2836
R82 3.3K
R81 3.3K
Q9 DTC124EK
C10 0.1
C9 100P
C11 100P
C25 0.1
C24 0.01
C23 0.01
L3 820
L2 820
R17 39K
C13 0.01
C12 0.47/50
X1 6.552M
C14 18P
C16 20P
CARRIER P.L.L
C15 18P
C17 0.01
C18 47/16
C22 75P
R21 1K
R20 430
C21 0.01
R18 220K
R19 150K
C20 0.47/50
C19 0.47/50
A.GND
VCC
B CH DET
A CH DET
CARRIER VCXO
AGC
DET
CH B AUTO SLICER
SW
SHAPER
DIFFERENCE
P/S
IC2 TA8662N
APC
MUTE.C
S/H
DIVIDER
CH A AUTO SLICER
CLK.VCXO
D.GND
L4 100
R22 2.2K
R23 2.2K
R24 2.2K
C26 0.1
C27 0.1
C28 0.1
C30 0.47/50
C29 0.01
R26 470
R25 1K
C31 62P
C32 68P
R27 39K
X2 5.824M
C79 18P
C33 15P
C34 15P
C35 15P
C36 47/10
C37 0.01
C40 10/10
R28 2.2K
C39 47/10
C38 0.01
L5 100
DA1
CL1
WS1
UT
ST1)
VSS
STAL
OSC
R33 22K
R32 22K
C47 47/10
C48 0.1
IC3 CF70123
DAC CLK OUT
C0
C1
C2
C3
C4
MUTE
S/I IDT
FAA CW
SYS CLK VC
GND
SYS CLK SEL
SYS CLK IN
EXT RES
DACS 3+4
DACS 1+2
QPSK DAT
QPSK CLK
FAW MANAGER
MEMORY MANAGER
DAC MANAGER
FLAME MEMORY1
FLAME MEMORY2
FLAME MEMORY3
RES OUT
S/I DAT
S/I CLK
728 CLK
ADW
728 DAT
ERR FLG
DAC VC
DAC OUT
DAC IN
IM DAT
EXT DAT
IM IDT
IM CLK
DAC SEL
C4 EN
MUTE EN
T' OSC
R31 1K
R30 10K
C43 100P
X3 16.384M
R29 47K
C44 0.1
D2 1SV111A
C42 20P
C41 39P
D/A OSC
C84 0.01

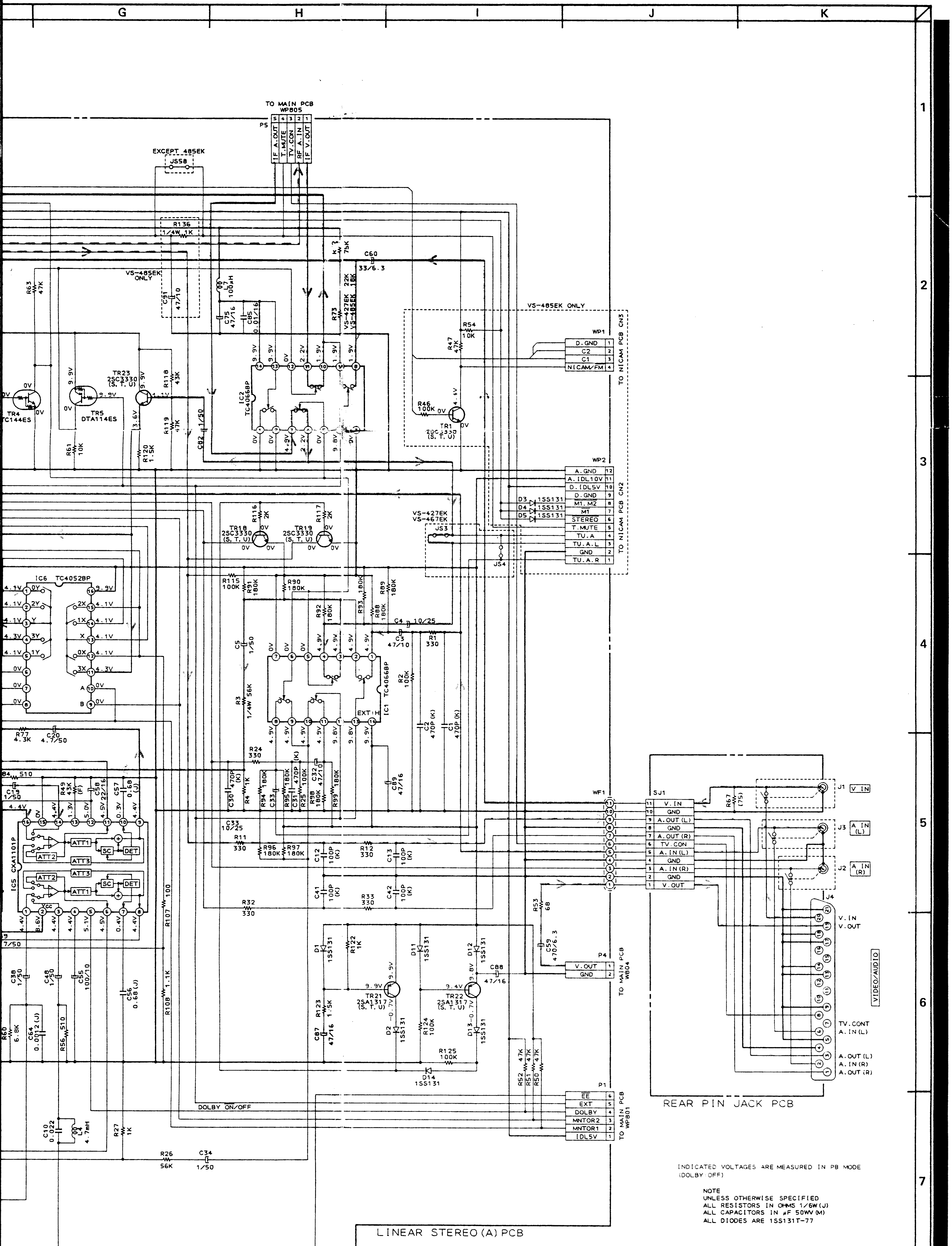
B (POWER SUPPLY) LINE
SIGNAL LINE

INDICATED VOLTAGES ARE MEASURED IN P.B.MODE.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W(J)
ALL CAPACITORS IN μF 50WV(M)
ALL INDUCTORS IN μH(K)

MICAM
SCHEMATIC DIAGRAM
NO.22-11 V110226M


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO MAIN PCB WP802
P2
PB
A.MUTE
VIDEO IN
GND
TO MAIN PCB WP803
P3
GND
CV OUT
GND
V.SLCTED
C62 47/6.3
TO OPERATION (A) PCB WP7
P11
VCR/EXT
D.GND
VS-485EK ONLY
TO OPERATION (A) PCB WP6
P12
C1
C2
NICAM/FM
D20 1SS131
R105 6.2K
C86 1/50
C72 10/16
*R104
VS-427, 467EK 15K
VS-485EK 20K
R106 1/4W 2.2K
R71 47
427, 467EK
C77
JS1
100/10
485EK ONLY
JS2
C76
100/10
TR15 2SA1317 (S, T, U)
TR20 2SC3330 (S, T, U)
R121 33K
R132 10K
TR12 2SA1317 (S, T, U)
TR11 2SC3330 (S, T, U)
TR17 2SC3330 (S, T, U)
TR16 2SC3330 (S, T, U)
R101 100K
R103 100K
R100 120K
R102 120K
C61 10P (J)
R70 680
R68 1.5K
R69 680
IC7 TC4053BP
R58 1.5K
R57 1.5K
C71 10/16
R114 100K
C70 47/10
C69 47/10
D23 1SS131
D22 1SS131
LEFT
RIGHT
NICAM
D70
D80
D60
BG3432SY
JS7
VS-485 ONLY
W3
LED (L)
LED (R)
LED (NICAM)
GND
LINEAR STEREO (B) PCB
V1102B528B
P13
VS-485EK ONLY
R64 120
TR8 DTA144ES
R66 120
TR10 DTA144ES
R65 120
TR9 DTA144ES
TR13 2SA1317 (S, T, U)
TR14 2SA1317 (S, T, U)
D6 1SS131
JS6
D7 1SS131
R74 1.5M
R79 10K
D9 1SS131
D8 1SS131
R80 3.3K
R135 75K
C90 10/16
C26 22/16
R20 1/4W 27K
R21 47K
R130 47K
R19 33
C21 0.015 (J)
C22 1/50
C23 1/50
C24 47/16
C25 47/16
R7 6.2K
IC4 BA7765AS
REC CTRL
REC
PB
LINE
EE
ALC
BF
TR3 2SC3330 (T)
C28 0.0027/16
R23 15K
C27 0.0056/16
OSC1 V1110-N
C29 0.0082/100 (J)
TR26 DTA114ES
TP.BIAS (L)
P10
R13 10
TR25 DTC144TS
R16 330K
R17 12K
C17 0.01/16
C15 1/50
R15 56
C18 2.2/50
PB LEVEL (L)
L5 4.7mH
VR5
R83 5.1K 1.5K
R18 10K
R5 1M
C6 10/16
R6 33K
C14 820P (J)
C16 100/6.3
R14 68K
C65 0.022 (J)
C79 0.033/25 (Z)
C7 0.1/50
C8 3.3/50
R8 1.2K
R109 100
TR6 2SJ74
TR7 2SJ74
C68 200P (J)
R87 47K
R112 1K
D18
R111 1K
D17
R110 1.1K
R113 1.5M
R85 100K
R86 100K
C66 100P (K)
C67 100P (K)
FL1 15.625KHz
FL2 70KHz
C9 1/50
R127 10
VR4 100
L-CH EE LEVEL
R128 10
R59 6.8K
C63 0.0012 (J)
R78 3.6K
R48 100K
D24 1SS131
FE
GND
FE
P7
P6
TO MAIN PCB W806
REC.S
IDL10V
A.GND
D19 1SS131
R45 3.3K
TR2 2SB1425 (S, E)
R44 3.3K
VR3 47K
C73 1/50
R43 20K
BIAS (R)
R42 1/4W 470
L6 100μH
R41 1/4W 27K
R131 47K
C83 47/10
C84 0.01
R75 4.3K
R-CH REC LEVEL
VR7 4.7K
R76 1.2K
C74 1/50
R22 20K
BIAS (L)
VR6 47K
C53 47/16
C54 47/16
C52 1/50
C51 1/50
C50 0.018 (J)
L1 10mH
R40 33
IC3 BA7765AS
C40 200P
R82 47K
R62 100K
R81 100K
C11 100P (K)
C39 100P (K)
FL3 15.625KHz
FL4 70KHz
S.E HEAD
LCH
RCH
P1
SIDE ERASE
GND
AH REC (L)
AH PB (L)
AH REC (R)
AH PB (R)
P8
A/C HEAD (2) PCB 1/2
V1102D5300
R30 6.2K
R37 330K
R38 12K
C46 0.01/16
C44 1/50
R36 56
C47 2.2/50
PB LEVEL (R)
VR2
R55 5.1K 1.5K
R39 10K
C35 10/16
R28 1M
R29 33K
C36 0.1/50
C37 3.3/50
R31 1.2K
R-CH EE LEVEL
VR1 100
R126 10
R34 10
TR24 DTC144TS
P9
TP.BIAS (R)
C43 820P (K)
R35 68K
C45 100/6.3
C78 0.022/25 (Z)


G
H
I
J
K
1
2
3
4
5
6
7
8
TO MAIN PCB WP805
P5
IF A.OUT
T.MUTE
TV.CON
RF A.IN
IF V.OUT
EXCEPT 485EK
JS58
R136 1/4W 1K
VS-485EK ONLY
C91 47/10
C60 33/6.3
VS-485EK ONLY
WP1
D.GND
C2
C1
NICAM/FM
TO NICAM PCB CN3
R54 10K
R47 47K
R46 100K
TR1 2SC3330 (S, T, U)
IC2 TC4066BP
TR23 2SC3330 (S, T, U)
R118 43K
R119 47K
R120 1.5K
TR5 DTA114ES
TR4 DTC144ES
R63 47K
R61 10K
C82 1/50
C75 47/16
C85 0.01/16
R73 VS-427EK 22K VS-467EK 18K VS-485EK 18K
WP2
A.GND
A.IDL10V
D.IDL5V
D.GND
M1,M2
M1
STEREO
T.MUTE
TU.A
TU.A.L
GND
TU.A.R
TO NICAM PCB CN2
D3 1SS131
D4 1SS131
D5 1SS131
VS-427EK VS-467EK
JS3
JS4
TR18 2SC3330 (S, T, U)
TR19 2SC3330 (S, T, U)
R116 2K
R117 2K
IC6 TC4052BP
R115 100K
R91 180K
R90 180K
R89 180K
R92 180K
R93 180K
R88 180K
C4 10/25
C3 47/10
R1 330
C5 1/50
R2 100K
IC1 TC4066BP
EXT:H
R3 1/4W 56K
C2 470P (K)
C1 470P (K)
R77 4.3K
C20 4.7/50
R24 330
C30 470P (K)
R4 1K
R94 180K
R95 180K
C31 470P (K)
R98 180K
C32 47/10
R99 180K
C89 47/16
C33 10/25
R11 330
R96 180K
R97 180K
C12 100P (K)
R12 330
C13 100P (K)
C41 100P (K)
R33 330
C42 100P (K)
R32 330
WF1
IC5 CXA1101P
ATT1
ATT2
ATT3
SC
DET
R49 43K (F)
C58 22/16
C57 0.68 (J)
R107 100
R108 1.1K
C38 1/50
C48 1/50
C55 100/10
C56 0.68 (J)
R60 6.8K
C64 0.012 (J)
R56 510
D1 1SS131
R122 1K
D11 1SS131
D12 1SS131
C88 47/16
TR21 2SA1317 (S, T, U)
TR22 2SA1317 (S, T, U)
R123 1.5K
C87 47/16
D2 1SS131
R124 100K
D13 1SS131
R125 100K
D14 1SS131
R53 68
C59 470/6.3
P4
V.OUT
GND
TO MAIN PCB W804
R52 47K
R51 47K
R50 47K
P1
EE
EXT
DOLBY
MINTOR2
MINTOR1
IDL5V
TO MAIN PCB WP801
DOLBY ON/OFF
C10 0.022
L4 4.7mH
R27 1K
R26 56K
C34 1/50
SJ1
V.IN
GND
A.OUT (L)
A.OUT (R)
TV CON
A.IN (L)
A.IN (R)
V.OUT
R67 75 (F)
J1 V IN
J3 A IN (L)
J2 A IN (R)
J4
V.IN
V.OUT
TV.CONT
A.IN(L)
A.OUT(L)
A.IN(R)
A.OUT(R)
VIDEO/AUDIO
REAR PIN JACK PCB
LINEAR STEREO (A) PCB

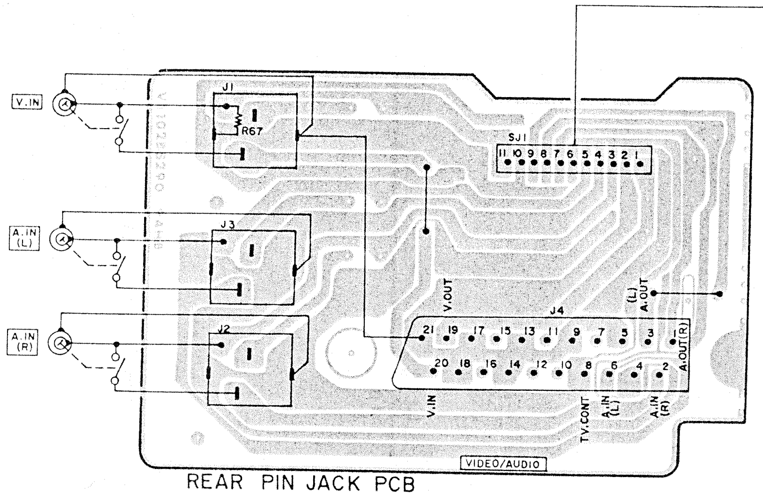
INDICATED VOLTAGES ARE MEASURED IN PB MODE (DOLBY OFF)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (M)
ALL DIODES ARE 1SS131T-77

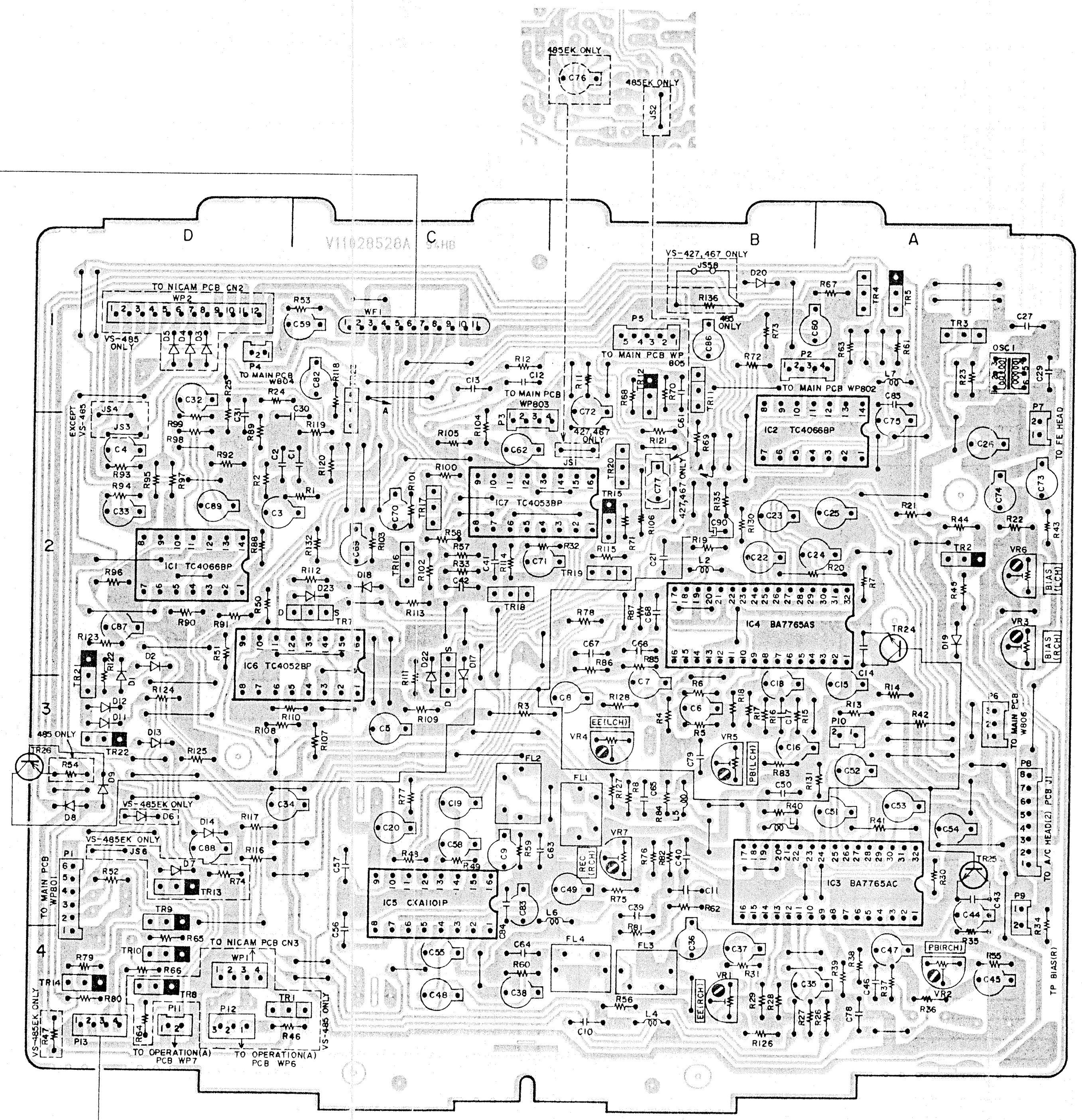
POWER SUPPLY LINE (AL or IDL)
POWER SUPPLY LINE (PB or REC)
AUDIO REC SIGNAL LINE
AUDIO PB SIGNAL LINE
VIDEO EE or REC SIGNAL LINE
VIDEO EE or PB SIGNAL LINE

LINEAR STEREO SCHEMATIC DIAGRAM

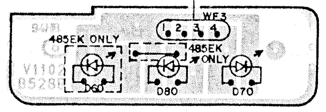
NO.22-12 V110225M


V.IN
A.IN (L)
A.IN (R)
J1
J2
J3
J4
R67
SJ1
V.OUT
A.OUT (L)
A.OUT (R)
T.V.CONT
VIDEO/AUDIO

REAR PIN JACK PCB
V1102B5290


485EK ONLY
C76
JS2
D
C
B
A
1
2
3
4
V1102B528A
TO NICAM PCB CN2
WP2
WF1
VS-485 ONLY
TO MAIN PCB WB04
P4
P5
TO MAIN PCB WP
P2
TO MAIN PCB WP802
TO MAIN PCB WP803
OSC1
P7
TO FE HEAD
IC1 TC4066BP
IC2 TC4066BP
IC6 TC4052BP
IC7 TC4053BP
IC4 BA7765AS
IC5 CXA1101P
IC3 BA7765AC
VS-427,467 ONLY
427,467 ONLY
VS-485EK ONLY
BIAS (LCH)
BIAS (RCH)
VR1
VR2
VR3
VR4
VR5
VR6
VR7
FL1
FL2
FL3
FL4
EE (LCH)
EE (RCH)
PB (LCH)
PB (RCH)
REC (LCH)
REC (RCH)
P1
TO MAIN PCB WPB01
P6
TO MAIN PCB WP806
P8
TO A/C HEAD(2) PCB J1
P9
TP BIAS(R)
TO NICAM PCB CN3
WP1
P11
P12
P13
TO OPERATION(A) PCB WP7
TO OPERATION(A) PCB WP6
VS-485 ONLY
485 ONLY
EXCEPT VS-485
JS3
JS4
JS6
JS8

LINEAR STEREO (A) PCB V1102B528A


WF3
485EK ONLY
V1102
B528
D80
D70
NICAM
R
L

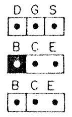
LINEAR STEREO (B) PCB
V1102B528B

LOCATION OF COMPONENTS

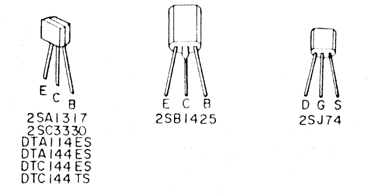
ICS
IC1........D2
IC2........A,B1,2
IC3........A,B3
IC4........A,B2
IC5........C3
IC6........C,D2,3
IC7........B,C2

TRANSISTORS
TR1........C4
TR2........A2
TR3........A1
TR4........A1
TR5........A1
TR6........C2,3
TR7........C2
TR8........D4
TR10.......D4
TR11.......B1
TR12.......B1
TR13.......D3
TR14.......D4
TR15.......B2
TR16.......C2
TR17.......C2
TR18.......C2
TR19.......B2
TR20.......B2
TR21.......D2,3
TR22.......D3
TR23.......C1,2
TR24.......A2
TR25.......A3
TR26.......D3

CONNECTORS
P1.........D3,4
P2.........A,B1
P3.........B,C1,2
P4.........D1
P5.........B1
P6.........A3
P7.........A1,2
P8.........A3
P9.........A3
P10........A3
P11........D4
P12........D4
P13........D4
WF1........C1
WP1........D4
WP2........D1



FET
PNP TRANSISTOR
NPN TRANSISTOR


E C B
2SA1317
2SC3330
DTA114ES
DTA144ES
DTC144ES
DTC144TS
E C B
2SB1425
D G S
2SJ74

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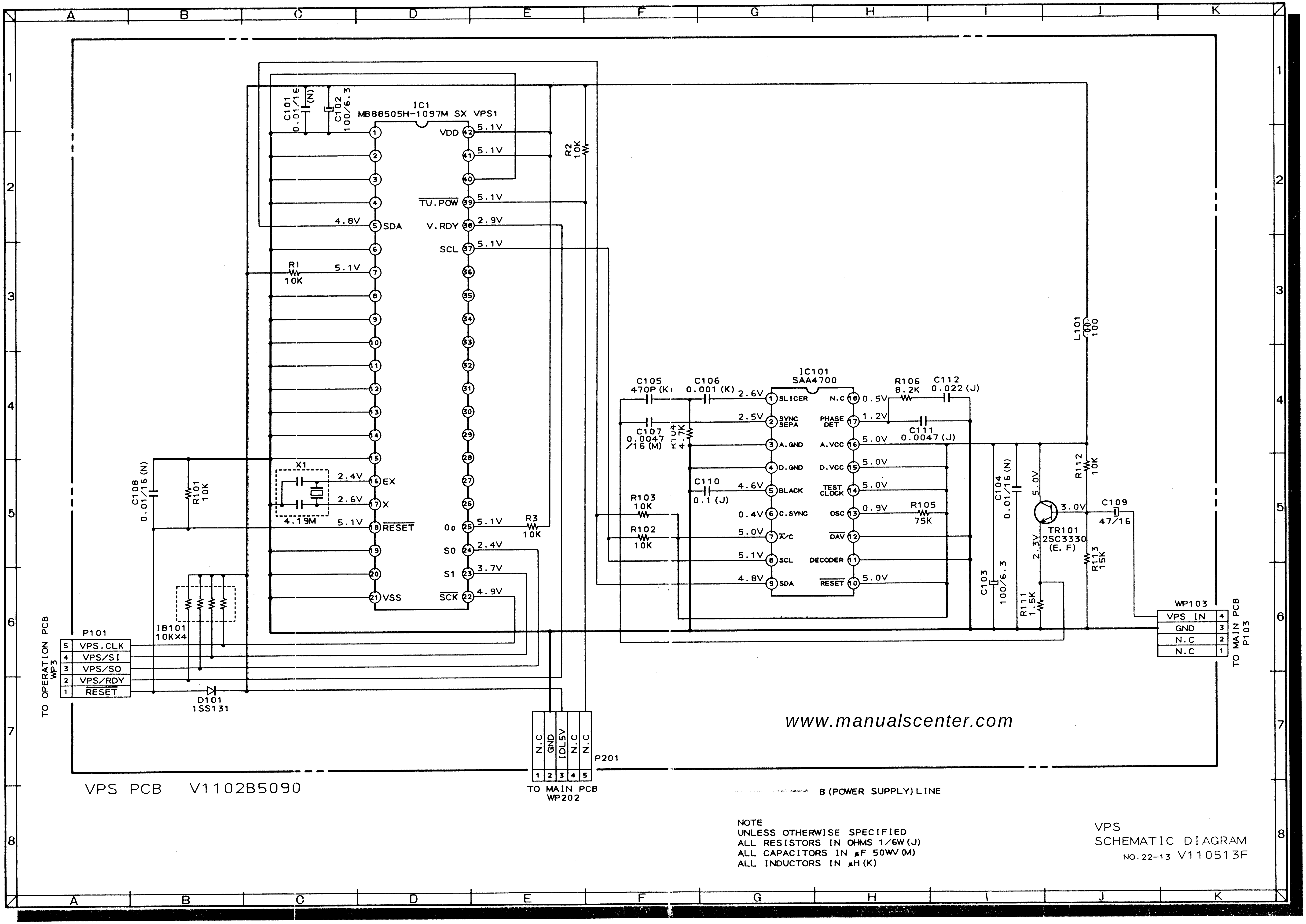
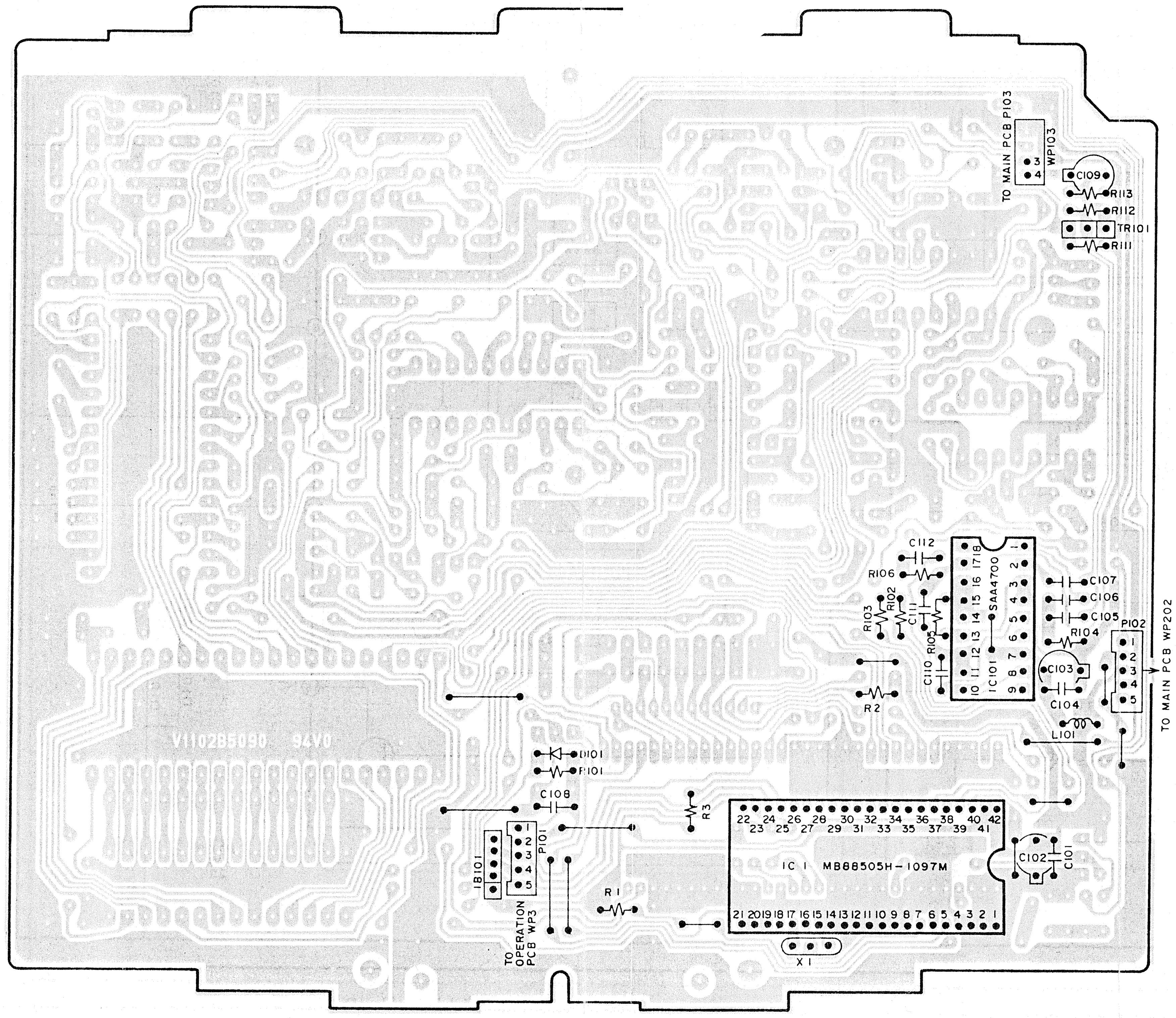

IC1
MB88505H-1097M SX VPS1
C101 0.01/16 (N)
C102 100/6.3
VDD
TU.POW
V.RDY
SCL
SDA
R1 10K
R2 10K
R3 10K
X1
4.19M
EX
X
RESET
VSS
SCK
S0
S1
O0
4.8V
5.1V
2.4V
2.6V
2.9V
3.7V
4.9V
C108 0.01/16 (N)
R101 10K
IB101 10K×4
D101 1SS131
P101
VPS.CLK
VPS/SI
VPS/SO
VPS/RDY
RESET
TO OPERATION PCB WP3
P201
N.C
GND
IDL5V
N.C
N.C
TO MAIN PCB WP202
IC101
SAA4700
SLICER
SYNC SEPA
A.GND
D.GND
BLACK
C.SYNC
A/C
SCL
SDA
N.C
PHASE DET
A.VCC
D.VCC
TEST CLOCK
OSC
DAV
DECODER
RESET
C105 470P (K)
C106 0.001 (K)
C107 0.0047 /16 (M)
R104 4.7K
C110 0.1 (J)
R103 10K
R102 10K
R106 8.2K
C112 0.022 (J)
C111 0.0047 (J)
R105 75K
C103 100/6.3
C104 0.01/16 (N)
R111 1.5K
R112 10K
R113 15K
L101 100
TR101 2SC3330 (E, F)
C109 47/16
2.6V
2.5V
4.6V
0.4V
5.0V
0.5V
1.2V
0.9V
2.3V
3.0V
WP103
VPS IN
GND
N.C
N.C
TO MAIN PCB P103
B (POWER SUPPLY) LINE

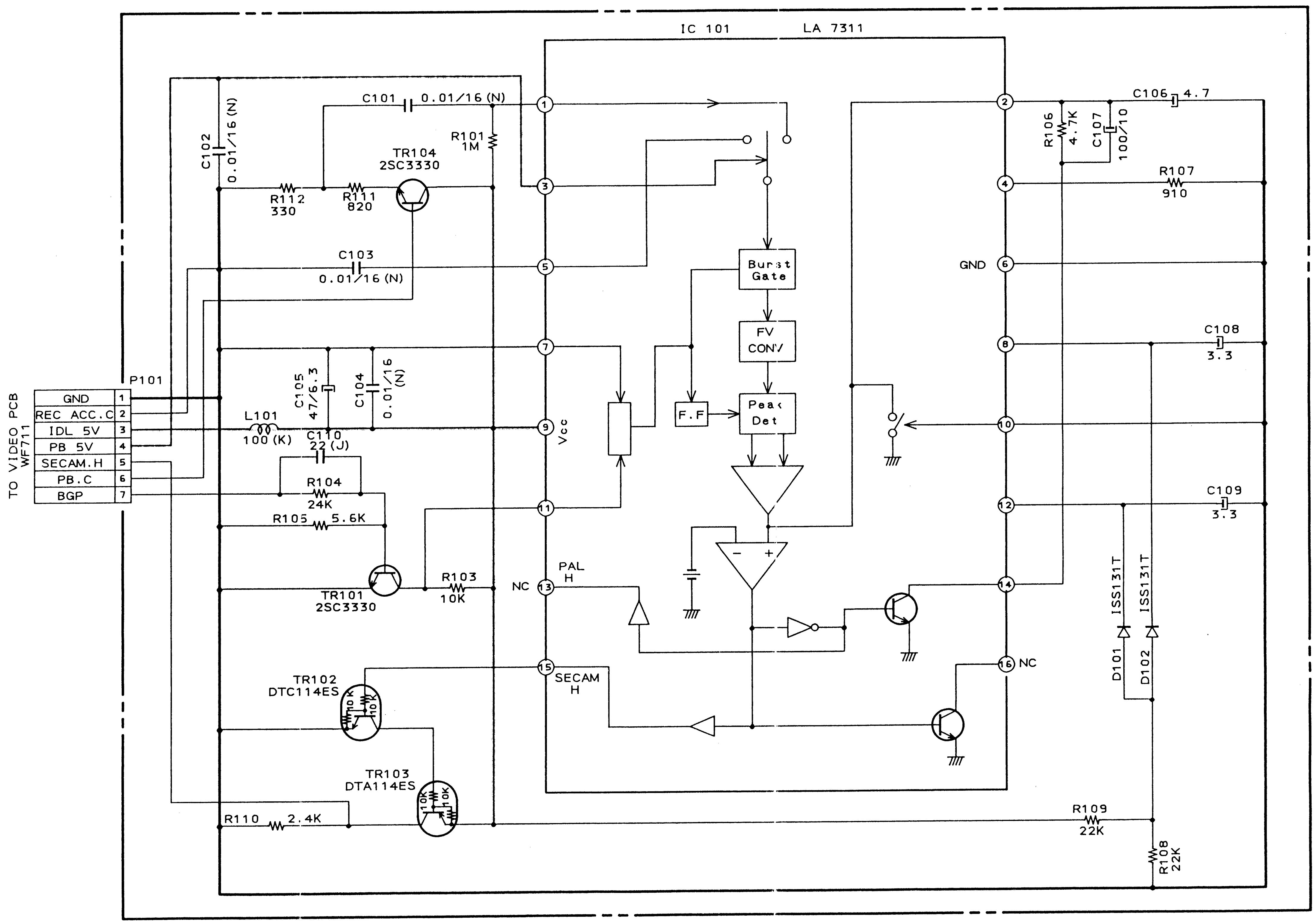
VPS PCB V1102B5090

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN µF 50WV (M)
ALL INDUCTORS IN µH (K)

VPS
SCHEMATIC DIAGRAM
NO.22-13 V110513F


TO MAIN PCB P103
WP103
3
4
C109
R113
R112
TR101
R111
C112
R106
R103
R102
C111
R105
C110
IC101
SAA4700
C107
C106
C105
R104
C103
C104
P102
TO MAIN PCB WP202
L101
R2
D101
R101
C108
R3
IC 1 MB88505H-1097M
C102
C101
P101
IB101
TO OPERATION PCB WP3
R1
X1
V1102B5090 94V0

VPS PCB V1102B5090


IC 101 LA 7311
TO VIDEO PCB WF711
P101
GND 1
REC ACC.C 2
IDL 5V 3
PB 5V 4
SECAM.H 5
PB.C 6
BGP 7
C101 0.01/16 (N)
C102 0.01/16 (N)
R101 1M
TR104 2SC3330
R112 330
R111 820
C103 0.01/16 (N)
C105 47/6.3
C104 0.01/16 (N)
L101 100 (K)
C110 22 (J)
R104 24K
R105 5.6K
TR101 2SC3330
R103 10K
NC
PAL H
SECAM H
Vcc
TR102 DTC114ES
10K
10K
TR103 DTA114ES
10K
10K
R110 2.4K
Burst Gate
FV CONV
F.F
Peak Det
GND
NC
R106 4.7K
C107 100/10
C106 4.7
R107 910
C108 3.3
C109 3.3
D101 ISS131T
D102 ISS131T
R109 22K
R108 22K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

P/S AUTO PCB V1102C5270

POWER SUPPLY LINE (AL. IDL)

POWER SUPPLY LINE (PB or REC ONLY)

UNLESS OTHERWIES SPECIFIED

ALL RESISTORS IN OHMS 1/6W (J)

ALL CAPACITORS IN μF 50WV (M)

ALL INDUCTORS IN μH (K)

P/S AUTO
SCHEMATIC DIAGRAM
NO.22-14 V110213M

5-3. A/C HEAD POSITION ADJUSTMENT

5-3-1. Azimuth adjustment

1) Connect an AC volt meter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Adjust the ⓑ screw to obtain the maximum audio output.

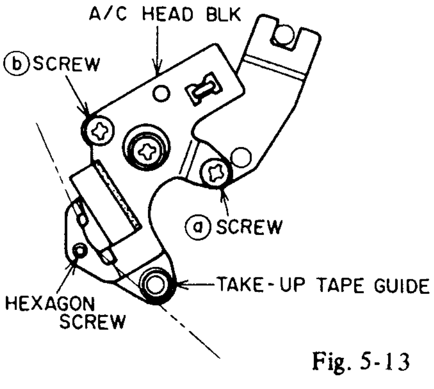
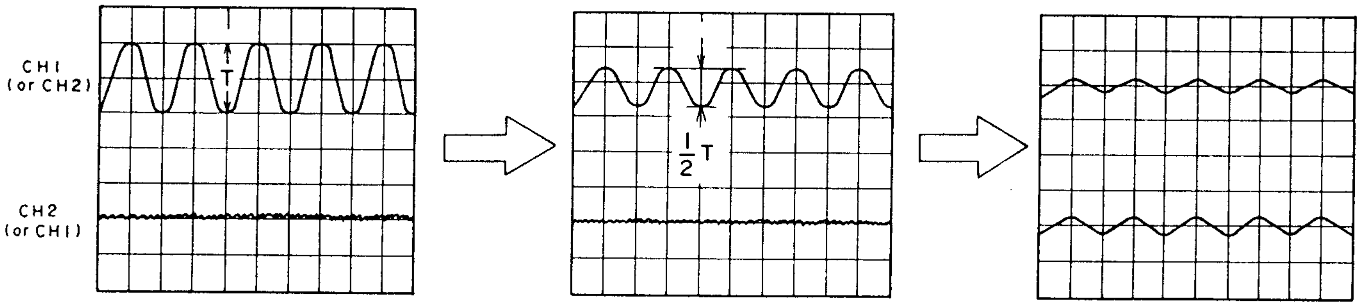


Fig. 5-13

5-3-2. Height adjustment

1) Play back the test tape TF-526HH (AT-751788).
2) Connect an oscilloscope's CH-1 to the LEFT CHANNEL AUDIO OUT terminal on the rear panel and CH-2 to TP-CTL CHK on the MAIN PCB.
3) Turn the hexagon screw to obtain 1/2 of the output level of either CH-1 or CH-2 whichever has an output signal as shown in Fig.5-14.
   Then set the oscilloscope's both channel to 100 mV / div and fine-adjust the hexagon screw until both signals of CH-1 and CH-2 are nearly the same level
4) Slightly turn the ⓐ screw until the tape edge barely touches the lower part of the TAKE UP TAPE GUIDE without any curl or wrinkle as shown in Fig.5-4.
5) Adjust the head azimuth again. (Turning the hexagon screw or ⓐ screw will cause head azimuth mis-alignment. Refer 5-3-1. Azimuth adjustment.)
6) Confirm that both signals of CH-1 and CH-2 are nearly the same level (The output level of CH-1 or CH-2 whichever has higher output level should be less than 100 mV p-p). If the result is not satisfactory, repeat steps 3) to 5).



(a) CH1 = T
(b) CH1 = $\frac{1}{2}$T
(c) CH1 = CH2

Fig. 5-14

5-3-3. Phase adjustment

1) Connect an oscilloscope to TP606 (ENVE) on the VIDEO PCB.
2) Play back the reference tape TF-530RFS (AT-851775).
3) Press one of the TRACKING buttons on the remote control until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig.5-15.
4) Loosen the ⓒ screw slightly so that the A/C HEAD PLATE can be moved with reasonable tightness.
5) Insert a sharp flat head (—) screwdriver into the A/C HEAD BASE and ⓐ hole as shown in Fig.5-15.
6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig.5-15 to obtain the maximum RF output, then tighten the ⓒ screw.

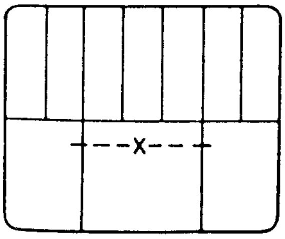


Fig. 5-15

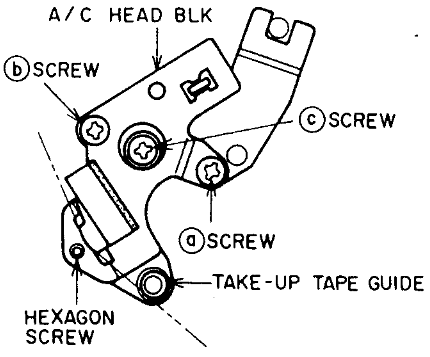


Fig. 5-16

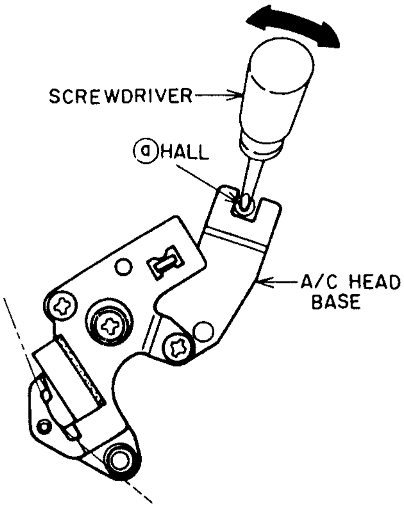


Fig. 5-17

VI. ELECTRICAL ADJUSTMENT

6-1. VIDEO, SERVO CIRCUITS UDIO CIRCUIT.

Precautionary items prior to adjustments

1. The color bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).

Required following test tapes.

Test tape	Parts No.
TF-527BL	AT-711880
TF-530RFS	AT-751775
TF-532CBS	AT-751360

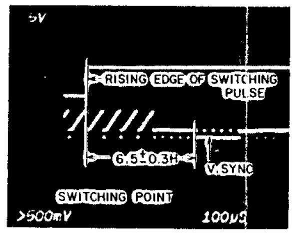
STEP	ADJUSTMENT ITEM
	1. MODE and INPUT SIGNAL/TEST TAPE 2. TEST POINT and ADJ part 3. RESULT & REMARKS

ADJ. part →

Test point ⇢

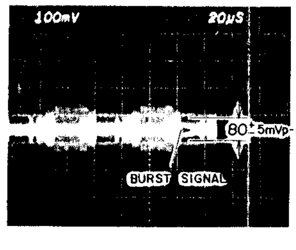
1	PB SWITCHING POINT

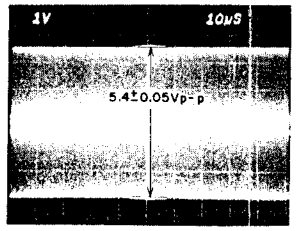
1. “PB”, test tape TF-530RFS
2. TP-SWP, VIDEO OUT & VR401 (SW.POINT)
3. * Connect an oscilloscope's CH-1 to TP-SWP for triggering and CH-2 to VIDEO OUT
   * Adjust VR401 so that the switching point is positioned 6.5 ± 0.3 H from the V-SYNC left edge as shown.

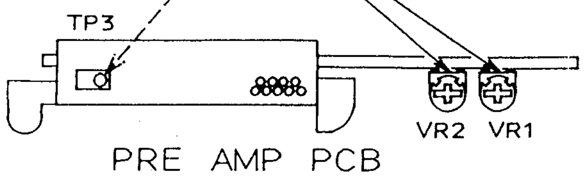


7	VIDEO REC CURRENT

1. “REC”, PAL color bar signal
2. TP3(REC.CURR), JW149(C.SYNC) & VR1(Y), VR2(CHROMA)
3. * Connect an oscilloscope's CH-1 to TP3 (REC.CURR), CH-2 to JW149(C.SYNC) for triggering and ground to PRE AMP P.C.B.
   * Turn the VR1(Y) fully counter-clockwise.
   * Adjust VR2(CHROMA) so that the chroma REC current becomes 80 ± 5 mVp-p at burst signal area.
   * Disconnect the input signal, then adjust VR1(Y) so that Y REC current becomes 5.4 ± 0.05 Vp-p.





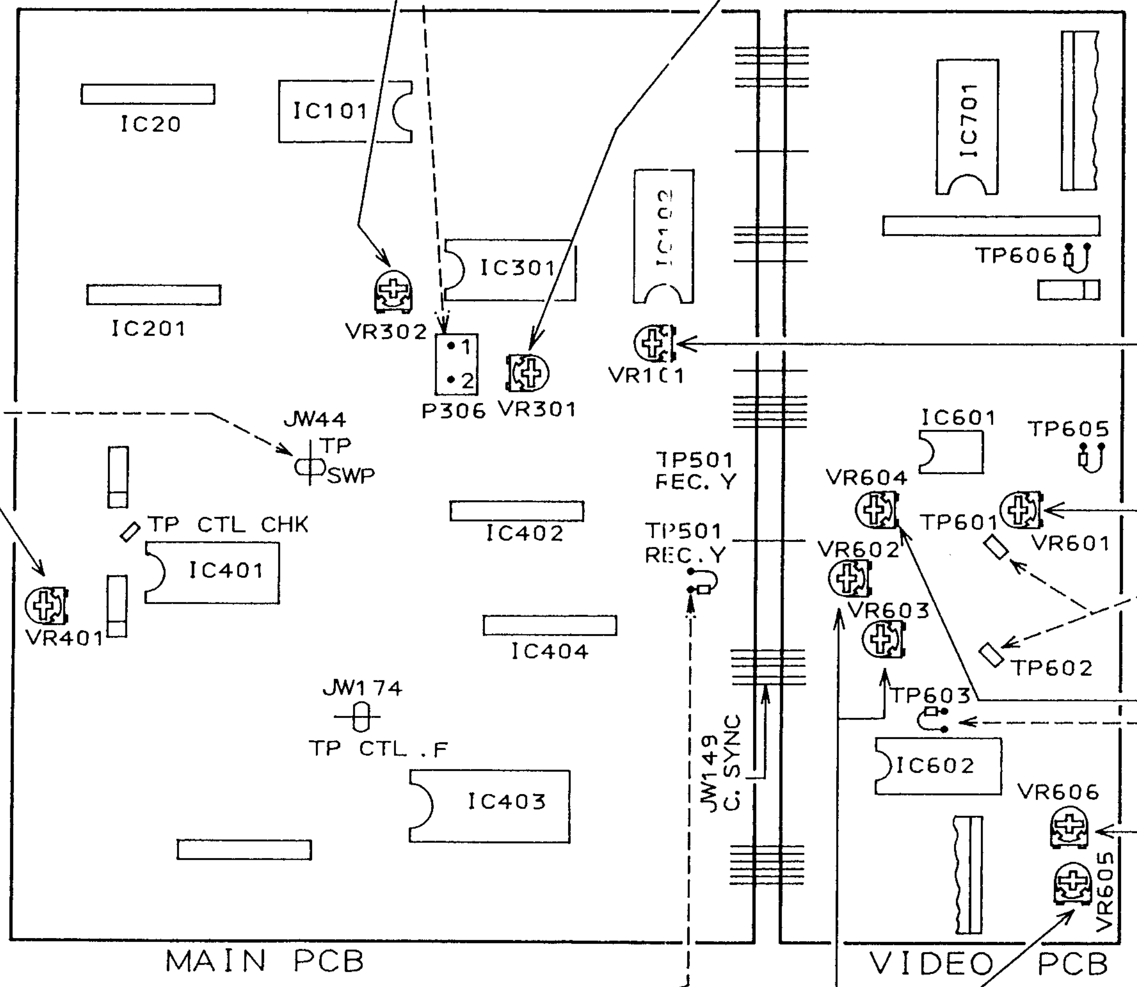


3	AUDIO REC BIAS

1. “REC” (no signal input)
2. P306 ① pin, ② pin & VR302
3. * Connect an AC voltmeter to P306 ① pin(GND side) and ② pin
   * Adjust VR302 so that the reading on the AC voltmeter becomes 2.4 ± 0.1 mV.

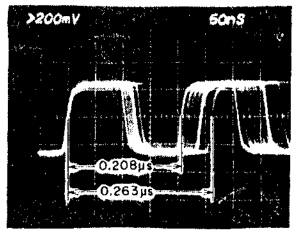
2	AUDIO PB LEVEL

1. “PB”, test tape TF-527BL
2. AUDIO OUT & VR301
3. * Connect AC voltmeter to AUDIO OUT
   * -4^{+0}_{-1} dBs



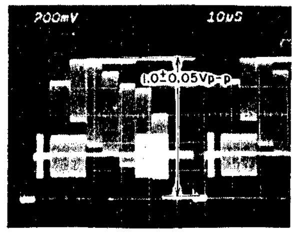
6	CARRIER SET & DEVIATION

1. “REC”, PAL color bar signal
2. TP501(REC.Y) & VR603(CARRIER), VR602(DEVIATION)
3. * Connect an oscilloscope to TP501 (REC.Y)
   * VR603(CARRIER). 0.263 μs (3.8 MHz)
   * VR602(DEVIATION). 0.208 μs (4.8 MHz)



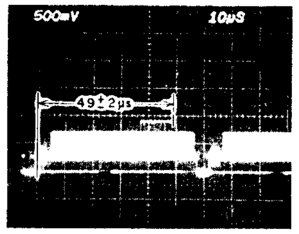
4	VIDEO E-E LEVEL

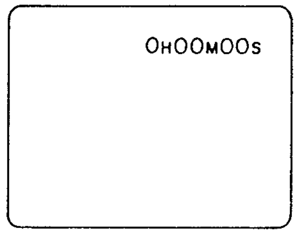
1. “E-E” (stop mode), PAL color bar signal
2. VIDEO OUT & VR605(E-E LEVEL)
3. * Connect an oscilloscope to VIDEO OUT.
   * 1.0 ± 0.05 Vp-p



10	CHARACTER POSITION

1. “E-E” (stop mode), (No signal input)
2. VIDEO OUT, TV screen & VR101(IMS)
3. * Press “DISPLAY” button once on the remote control to display elapsed tape counter.
   * Connect an oscilloscope to VIDEO OUT
   * Adjust VR101(IMS) so that right end of the IMS signal becomes 49 ± 2 μs from the H-SYNC as shown.

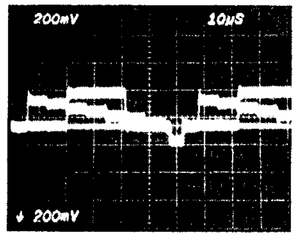




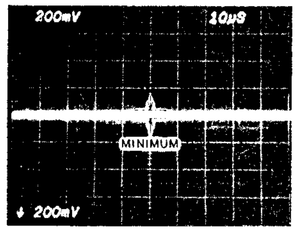
ON THE SCREEN

8	CCD

1. “PB”, test tape TF-532CBS
2. TP601(CCD),TP602(CCD) & VR601 (CCD LEVEL)
3. * Set an oscilloscope to “ADD” mode and CH-2's polarity to “INVERTED”.
   * Connect CH-1 to TP601(CCD) and CH-2 to TP602(CCD).
   * Adjust VR601 so that waveform level on the oscilloscope becomes minimum.



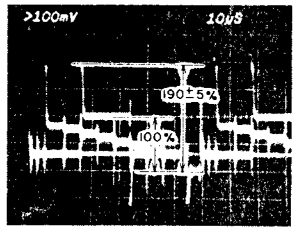
NO GOOD



GOOD

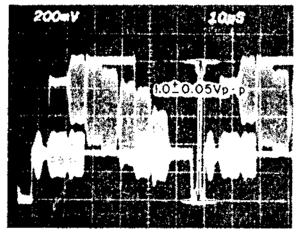
5	WHITE CLIP

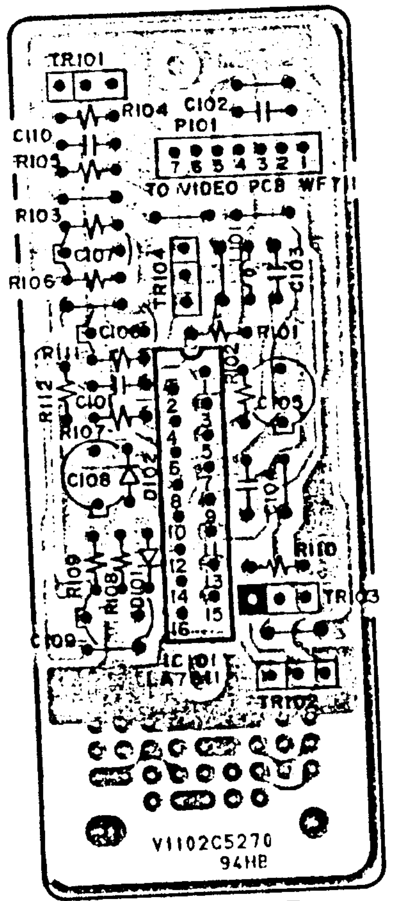
1. “E-E” (stop mode), PAL color bar signal
2. TP603(W.CLIP) & VR604(W.CLIP)
3. * Connect an oscilloscope to TP603(W. CLIP)
   * Adjust VR604(W.CLIP) so that white clip level becomes 190 ± 5 % as shown.



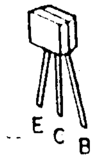
9	VIDEO PB LEVEL

1. “REC”-“PB”, PAL color bar signal
2. VIDEO OUT & VR606(PB LEVEL)
3. * Connect an oscilloscope to VIDEO OUT
   * Make some recording on the tape then play it back
   * Adjust VR606 so that PB level becomes 1.0 ± 0.05 Vp-p




TR101
R104
C102
C110
P101
7 6 5 4 3 2 1
R105
TO VIDEO PCB WFT
R103
C107
TR104
C103
R106
C106
R101
R111
R112
C101
C105
R107
C108
R110
R109
R108
TR103
C109
IC101
TR102
V1102C5270
94HB

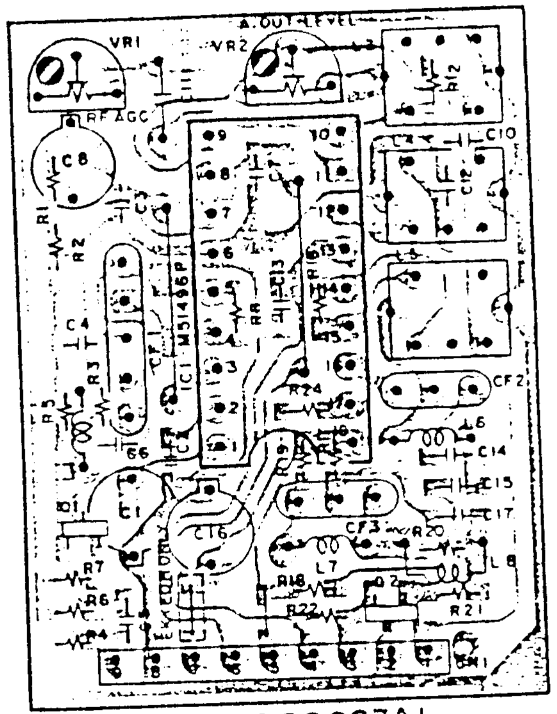
P/S AUTO PCB
V1102C5270



DTA114ES
DTC114ES
2SC3330

B C E
■●● = PNP TRANSISTOR

B C E
●●● = NPN TRANSISTOR


VR1
VR2
A.OUT LEVEL
RF AGC
C8
R1
R2
C4
R3
R5
IC1
CF2
C10
L6
C14
C15
C17
CF3
VR20
C16
L7
L8
R18
R22
R21
R24
R4
R6
R7
SN1

VIF UNIT 6B00663A1

6-2.

Precautionary items prior to adjustments

1. All adjustment should be performed without DOLBY (DOLBY OFF).
2. Unless otherwise specified, set AUDIO SIGNAL GENERATOR to 1 kHz.

Required following test tapes.

Test tape	Parts No.
TF-527BL	AT-711880

STEP	ADJUSTMENT ITEM

1. MODE and INPUT SIGNAL/TEST TAPE
2. TEST POINT and ADJ part
3. RESULT & REMARKS

ADJ. part →
Test point ⇢

5 | L-CH REC BIAS

1. "REC", no signal input
2. P10(TP-BIAS) ① pin, ② pin & VR6(L-CH REC BIAS)
3. * Connect AC voltmeter to P10 ① pin (ground side) and ② pin.
   * Adjust VR6(L-CH REC BIAS) so that reading on the AC voltmeter becomes 4.2 ± 0.1 mV.
   * Make some recording (Input −26 dBs 1 kHz and 10 kHz alternately) then play it back. Check frequency response whether it is within ± 3dB or not.
   If the comparison of the 10 kHz level is over than + 3dB, readjust VR6 so that reading is 4.4 mV.
   If 10 kHz level is lower than -3 dB, readjust VR6 so that reading is 4.0 mV.

6 | R-CH REC BIAS

1. "REC", no signal input
2. P9(TP-BIAS) ① pin, ② pin & VR3(R-CH REC BIAS)
3. * Connect AC voltmeter to P9 ① pin (ground side) and ② pin.
   * Adjust VR3(R-CH REC BIAS) so that reading on the AC voltmeter becomes 4.4 ± 0.1 mV.
   * Check frequency response in the same manner as 5.(L-CH REC BIAS).
   * If the result is not satisfactory, readjust VR3 so that the reading is 4.6 mV or 4.2 mV.

4 | R-CH PB LEVEL

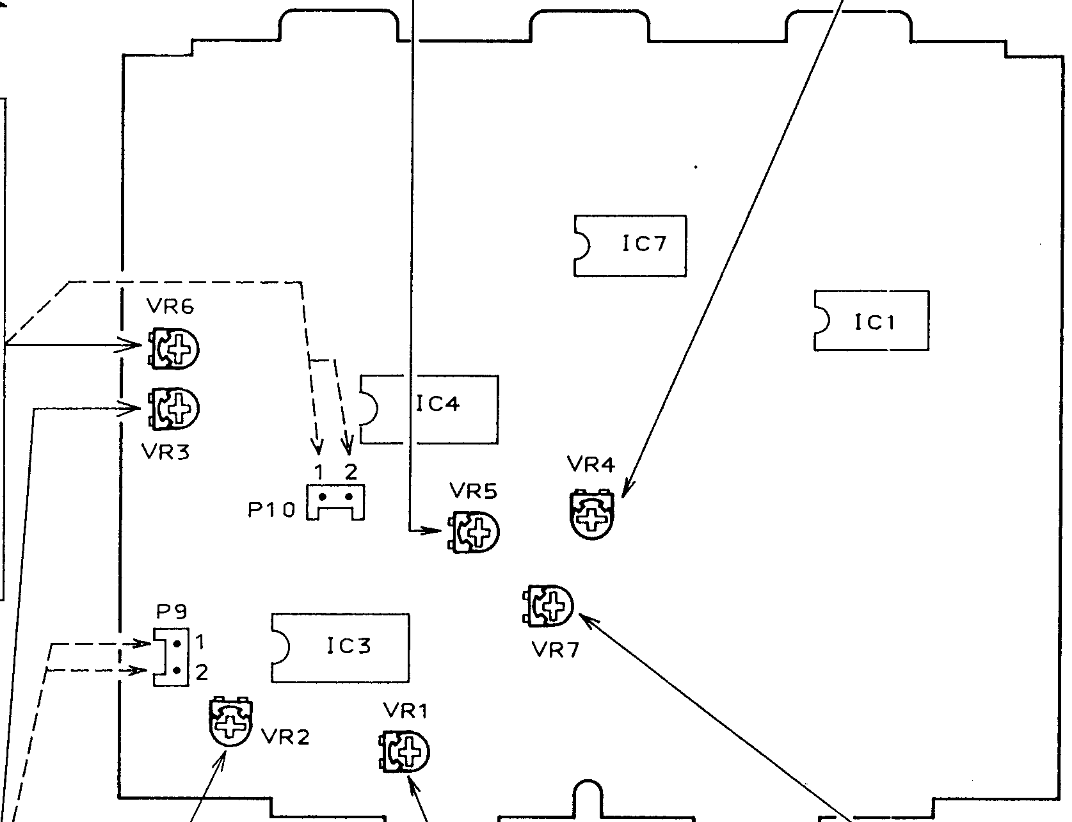
1. "PB", test tape TF-527BL
2. R-CH AUDIO OUT & VR2(R-CH PB LEVEL)
3. * Connect an AC voltmeter to R-CH AUDIO OUT.
   * Adjust VR2(R-CH PB LEVEL) so that the output level becomes −5.0±0.1 dBs.

3 | L-CH PB LEVEL

1. "PB", test tape TF-527BL
2. L-CH AUDIO OUT & VR5(L-CH PB LEVEL)
3. * Connect an AC voltmeter to L-CH AUDIO OUT.
   * Adjust VR5(L-CH PB LEVEL) so that the output level becomes −5.0±0.1 dBs.

1 | L-CH EE LEVEL

1. "E-E"(stop mode), AUDIO SIGNAL GENERATOR(−6 dBs 1 kHz)
2. L-CH AUDIO OUT & VR4(L-CH EE LEVEL)
3. * Adjust an AUDIO SIGNAL GENERATOR's output to -6dBs (0 dBs = 0.775 V).
   Then connect the AUDIO SIGNAL GENERATOR to L-CH AUDIO IN terminal.
   * Connect an AC voltmeter to L-CH AUDIO OUT.
   * Adjust VR4 (L-CH EE LEVEL) so that the output level of L-CH becomes −6 ± 0.1 dBs.



LINEAR STEREO (A) PCB

2 | R-CH EE LEVEL

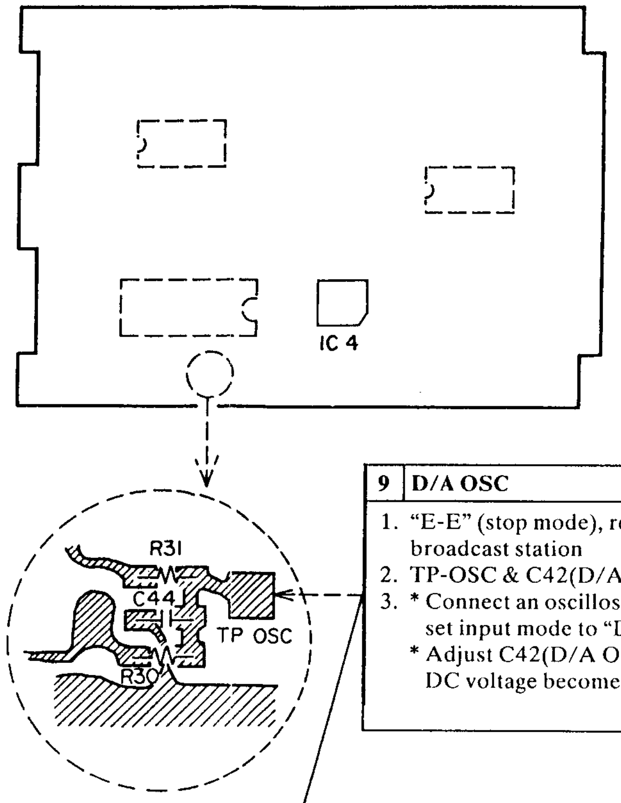
1. "E-E"(stop mode), AUDIO SIGNAL GENERATOR(−6 dBs 1 kHz)
2. R-CH AUDIO OUT & VR1(R-CH EE LEVEL)
3. * Connect an AUDIO SIGNAL GENERATOR to R-CH AUDIO IN terminal (The same situation as L-CH EE LEVEL adjustment).
   * Connect an AC voltmeter to R-CH AUDIO OUT.
   * Adjust VR1 (R-CH EE LEVEL) so that the output level of R-CH becomes −6 ± 0.1 dBs.

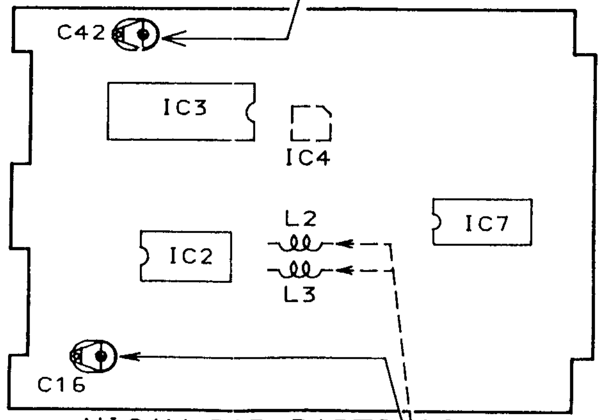
7 | R-CH REC LEVEL

1. "REC"→"PB", AUDIO SIGNAL GENERATOR (−6 dBs, 1 kHz)
2. L-CH, R-CH AUDIO OUT & VR7(R-CH REC LEVEL)
3. * Connect an AUDIO SIGNAL GENERATOR (−6 dBs, 1 kHz) to L-CH and R-CH AUDIO INPUT
   * Make some recording then play it back and check the level difference between L-CH and R-CH. If the difference is higher than 2 dB, adjust VR7(R-CH REC LEVEL) so that R-CH level is ± 2dB of L-CH PB(REC-PB)level.

VS-485EK ONLY

NICAM PCB PATTERN SIDE





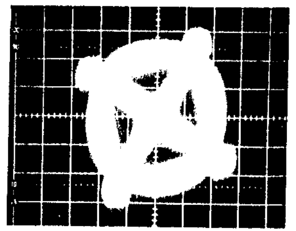
NICAM PCB PARTS SIDE

9 | D/A OSC

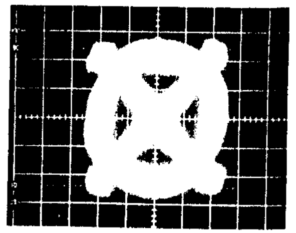
1. "E-E" (stop mode), receive NICAM broadcast station
2. TP-OSC & C42(D/A OSC)
3. * Connect an oscilloscope to TP-OSC and set input mode to "DC".
   * Adjust C42(D/A OSC) so that average DC voltage becomes 1.8 V.

8 | CARRIER P.L.L

1. "E-E" (stop mode), receive NICAM broadcast station
2. Lead of L3, L2 & C16(CARRIER PLL)
3. * Set the oscilloscope's display mode to "X-Y" mode and 20 mV/div.
   Connect an oscilloscope's CH-1 to the lead of L3 and CH-2 to the lead of L2.
   * Adjust C16(CARRIER PLL) so that the vertical line of the waveform becomes straight as shown.



NO GOOD



GOOD

V.II PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A)	[S] : SAA (Australia)
[B] : BEAB (England)	[U] : U/T (Universa Area)
[C] : CSA (Canada)	
[E] : CEE (Europe)	[V] : VDE (W. Germany)
[J] : JPN (Janan)	[Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠(*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

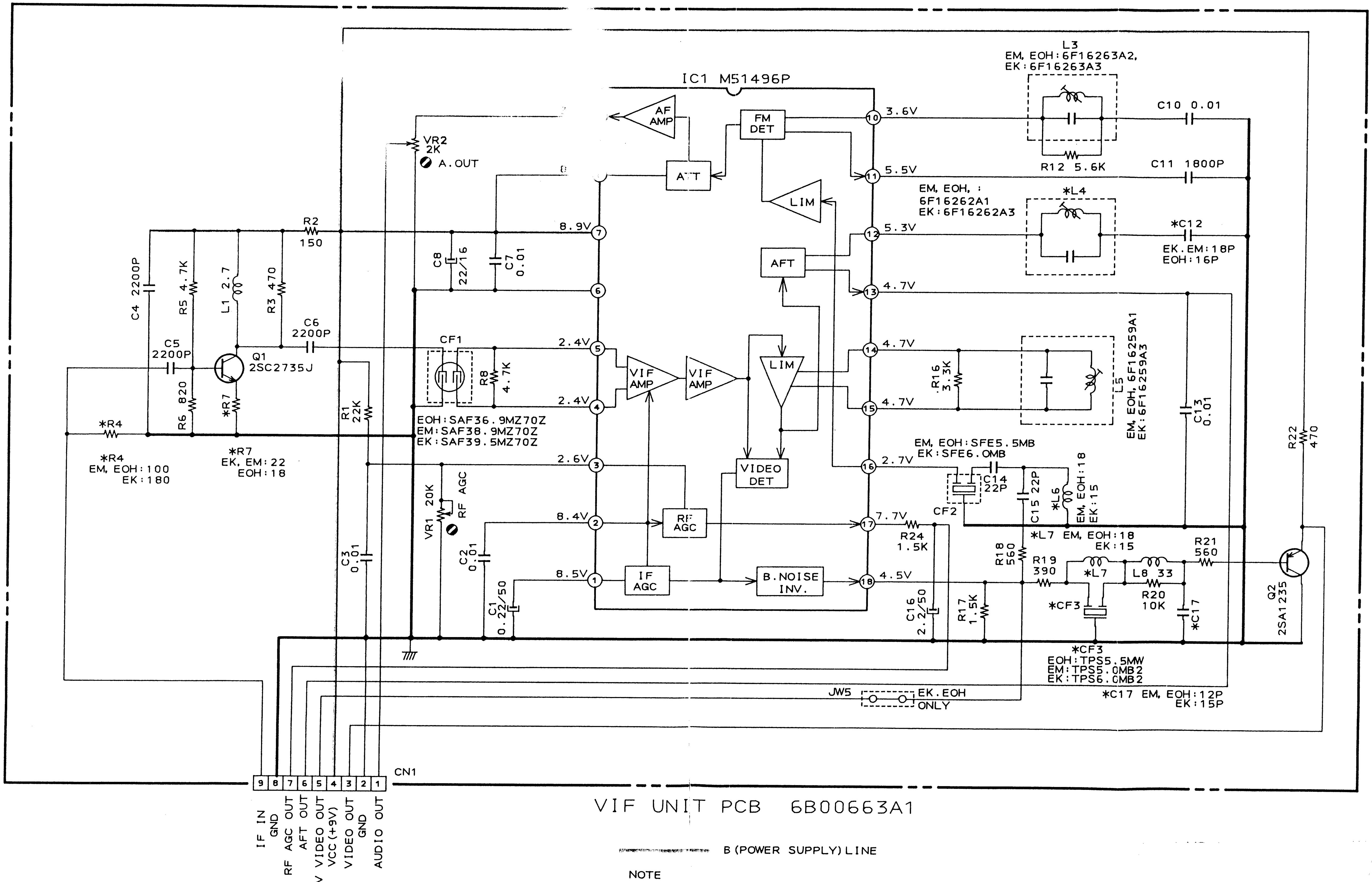
AVERTISSEMENT

⚠(*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
	BB-V1102A020A	MECHA DECK BLK 425EA [EOH-E,EOG,EM-E]
2	BB-V1102A020C	MECHA DECK BLK 427EK [EK-B]
3	BL-V1102A140A	ARM LOADING BLK 425EA
4	BL-387458J1	CAPSTAN BRAKE PART
5	BL-387501J	HOLDER PINCH PART
6	BL-V1102A050A	TENSION ARM BLK 425EA
7	BM-386236J	MOTOR DFX-67B3VWA1
8	BM-387503J	MOTOR PART
9	BM-M3225A020A	PC MOTOR BLK SM-250
10	*BT-389239J	TRANS POW V1102 EK [EK-B]
11	*BT-391109J	TRANS POW V1105 EO [EOH-E,EOG]
12	*BT-389240J	TRANS POW V1105-EM
13	BV-V1102A150A	CASSETTE LOAD BLK 425EA
14	BV-V1102A070A	LEADER S BLK 425EA
15	BV-V1102A080A	LEADER T BLK 425EA
16	BV-V1102A410A	LOWER DRUM BLK 425EA [422/425/427/485]
17	BV-V1102A410B	LOWER DRUM BLK 465EA [467]
18	BV-V1102A420A	UPPER DRUM BLK [422/425/427/485]
19	BV-V1102A420C	UPPER DRUM BLK [467]
20	ED-390011J	D LED GL451 INFRARED [D1]
21	ED-390012J	D LED GL4800 INFRARED [D2]
22	ED-390686J	D LED TLN105B INFRARED
23	ED-386226J	D SCHOTTKY RB100AT-32T26 40/1
24	*ED-389296J	D SILICON BR31-B-D-80 100/3.0A
25	ED-380089J	D SILICON DFC15TC-FD1 200/1.5A
26	*ED-378455	D SILICON DSA12TG 600/1.2A
27	*ED-385935J	D SILICON ERA22-04V3 T26 400/5
28	ED-307572	D SILICON H 1SS131
29	ED-624903	D SILICON H 1S2473
30	*ED-511907	D SILICON 1N4002 100/1.0A
31	ED-391103J	D ZENER H HZS12B2
32	ED-343996	D ZENER H HZ12 B1
33	ED-346618	D ZENER H HZ15 1
34	ED-322046	D ZENER H HZ18 1
35	ED-346526	D ZENER H HZ6B1L
36	ED-346541	D ZENER H HZ9B2L
37	*EF-601942	FUSE SEMKO T 250V 630MA
38	*EI-376794J1	IC BA10393
39	*EI-368152	IC BA707
40	EI-387586J	IC BA7244BS
41	EI-387598J	IC BA7252S
42	EI-380090J	IC NJM2352D
43	EI-390825J	IC S-8052ANB-NE T1
44	EI-376112	IC UPD6122G
45	EI-390822J	IC UPD75304G-057-3B9 SXREMA1
46	EI-390687J	OSC CE CSU455PL 455KHZ
47	EI-389972J	OSC CE W/C FCR2.2MC3 2.2MHZ
48	EI-368825	OSC X'TAL MX-38T 32.768KHZ
49	*EQ-389298J	RELAY POW AJV12442 1NO 100V
50	*ER-392819J	R FUSE H S10 RF25SC 1/4W R10K
51	*ER-392807J	R FUSE H S10 RF25SC 1/6W R12K
52	*ER-391043J	R FUSE H S10 RF25SC 1/6W R47K
53	*ER-391044J	R FUSE H S10 RF25SC 1/6W R68K
54	ER-389875J	R OMF H S10 FS 1/2W R68J
55	ES-373099	SW LEAF MTS10110MPC1
56	ES-387465J	SW MODE SELECT MMS00070ZLBO
57	ET-356336	TR DTA114ES
58	ET-360646	TR DTA143ES
59	ET-354364	TR DTC143TS
60	ET-354414	TR DTC144ES
61	ET-370310	TR DTC144TS
62	ET-361490	TR PHOTO PN268 R,S [PTR1]
63	ET-390010J	TR PHOTO PT4800 [PTR2]
64	ET-390009J	TR PHOTO PT493F [PTR4]
65	ET-353899	TR 2SA1317 S,T,U
66	ET-366365	TR 2SB1185 E,F
67	ET-356817	TR 2SB891 Q,R
68	ET-302502	TR 2SC2001 K
69	*ET-389415J	TR 2SC3169
70	ET-360137	TR 2SC3330 U,V F05
71	ET-380685J	TR 2SD1761 E,F,G
72	ET-373025	TR 2SD1944 J1,J2,K
73	ET-391025J	TR 2SD2012
74	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
75	HE-361456	HEAD E HVFMD0015B
76	HR-390015J	HEAD COMBO HVMZA1045C [EOH-E,EOG,EM-E]
77	HR-389866J	HEAD COMBO HVSMC1017A [EK-B]
78	MA-387474J	BASE DRUM
79	MB-387289J	BELT CAPSTAN
80	MI-387294J	IDLLER PART
81	ML-391745J1	ARM DAMPER
82	ML-387350J1	ARM LID OPENER
83	ML-387423J	ARM LOADING BRAKE
84	ML-387277J	ARM REVIEW PART
85	ML-387402J	LEVER TRIGGER
86	ML-387316J	MAIN BRAKE(S) PART
87	ML-387318J	MAIN BRAKE(T) PART
88	ML-387321J	REVIEW BRAKE PART
89	ML-387324J	SLIDER BRAKE PART
90	ML-387327J	SLIDER TRIGGER
91	MR-387406J	HOLDER THRUST WORM
92	MR-391968J	PULLEY TRIGGER(2)
93	MR-387286J	ROLLER IMPEDANCE
94	MT-390954J1	DISK (2)PART
95	MZ-387298J1	DISK CLUTCH PART
96	MZ-387331J	GEAR CAM SLIDER
97	MZ-387335J	GEAR EJECT
98	MZ-387333J	GEAR FRONT LOADING
99	MZ-V1102A090A	GEAR TOGGLE (S) BLK 425EA
100	MZ-V1102A100A	GEAR TOGGLE (T) BLK 425EA
101	MZ-387330J	GEAR WORM PART
102	MZ-387332J	GEAR WORM WHEEL

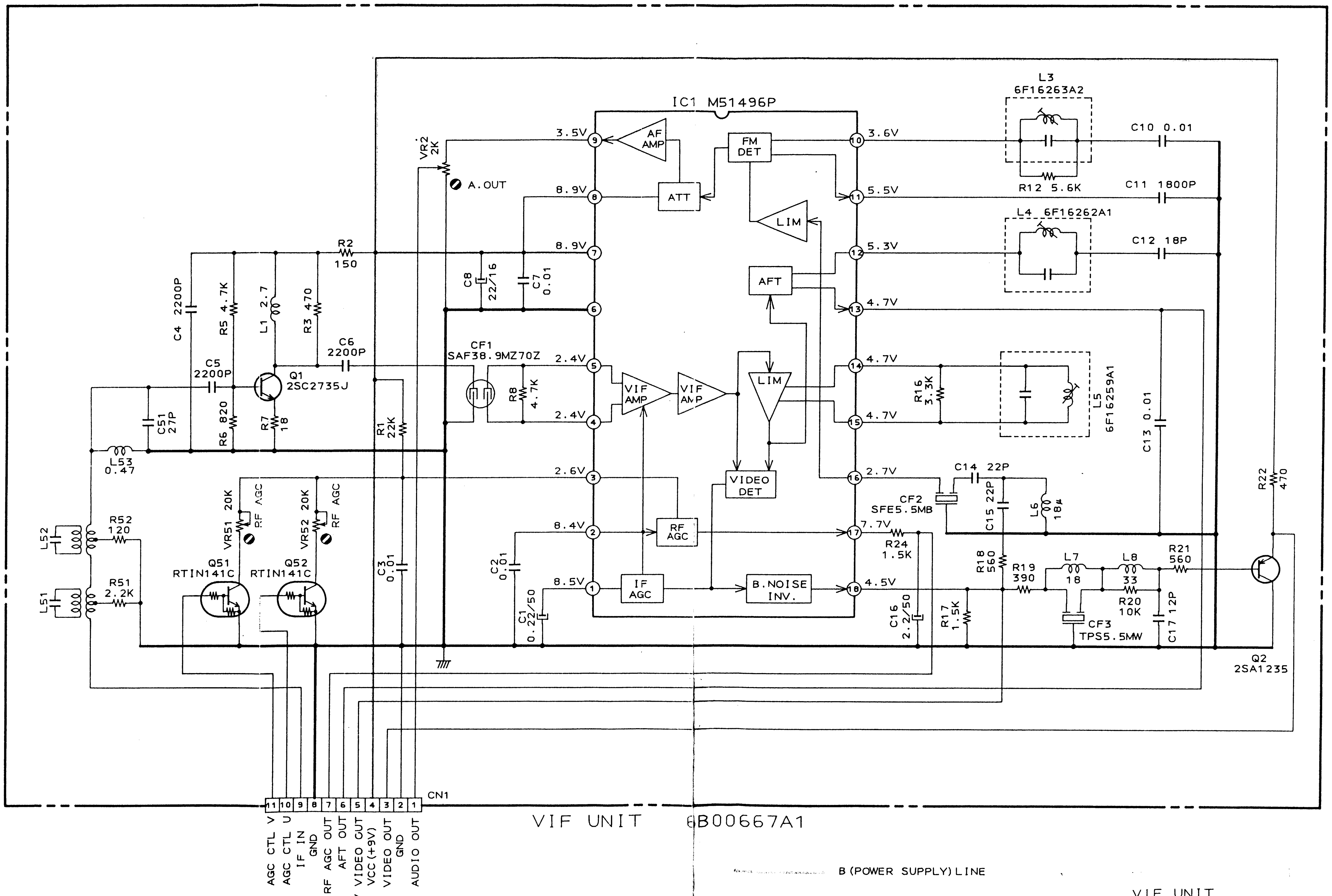

IC1 M51496P
AF AMP
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
VR2 2K
A.OUT
R2 150
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
Q1 2SC2735J
R6 820
*R7
*R4
*R4 EM, EOH:100 EK:180
*R7 EK, EM:22 EOH:18
C8 22/16
C7 0.01
CF1
R8 4.7K
EOH:SAF36.9MZ70Z
EM:SAF38.9MZ70Z
EK:SAF39.5MZ70Z
R1 22K
VR1 20K
RF AGC
C3 0.01
C2 0.01
C1 0.22/50
8.9V
2.4V
2.4V
2.6V
8.4V
8.5V
3.6V
5.5V
5.3V
4.7V
4.7V
4.7V
2.7V
7.7V
4.5V
L3 EM, EOH:6F16263A2, EK:6F16263A3
C10 0.01
R12 5.6K
C11 1800P
EM, EOH, : 6F16262A1 EK:6F16262A3
*L4
*C12 EK.EM:18P EOH:16P
R16 3.3K
L5 EM, EOH, 6F16259A1 EK:6F16259A3
C13 0.01
R22 470
EM, EOH:SFE5.5MB EK:SFE6.0MB
C14 22P
C15 22P
*L6 EM, EOH:18 EK:15
CF2
R24 1.5K
*L7 EM, EOH:18 EK:15
R18 560
R19 390
*L7
L8 33
R21 560
R20 10K
Q2 2SA1235
C16 2.2/50
R17 1.5K
*CF3
*C17
*CF3 EOH:TPS5.5MW EM:TPS5.0MB2 EK:TPS6.0MB2
JW5
EK.EOH ONLY
*C17 EM, EOH:12P EK:15P
CN1
9 8 7 6 5 4 3 2 1
IF IN
GND
RF AGC OUT
AFT OUT
VPV VIDEO OUT
VCC(+9V)
VIDEO OUT
GND
AUDIO OUT

VIF UNIT PCB 6B00663A1

B (POWER SUPPLY) LINE

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL CAPACITORS IN μF 50 WV (J)
ALL INDUCTORS IN μH (K)

VIF UNIT
SCHEMATIC DIAGRAM
NO.22-15 V110227M

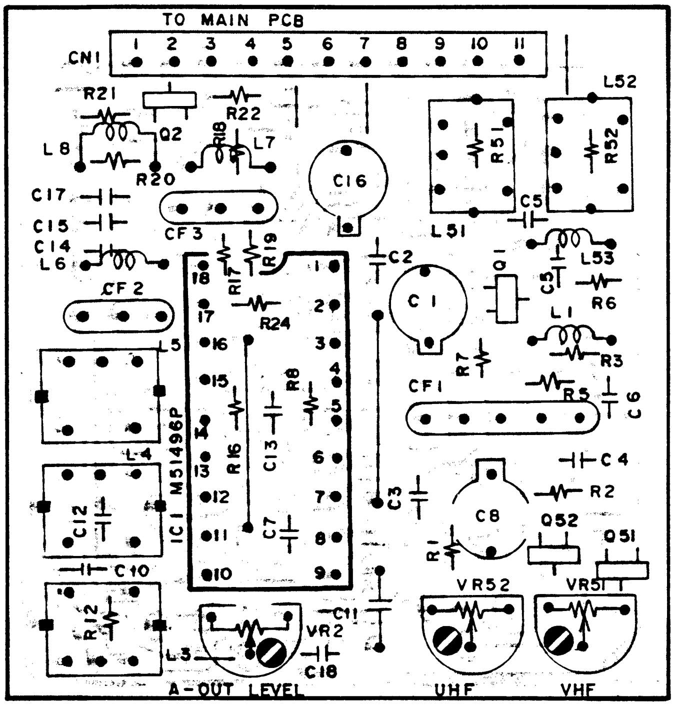

IC1 M51496P
AF AMP
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
3.5V
8.9V
8.9V
2.4V
2.4V
2.6V
8.4V
8.5V
3.6V
5.5V
5.3V
4.7V
4.7V
4.7V
2.7V
7.7V
4.5V
VR2 2K
A.OUT
R2 150
C8 22/16
C7 0.01
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
CF1 SAF38.9MZ70Z
R8 4.7K
C5 2200P
Q1 2SC2735J
C51 27P
R6 820
R7 18
R1 22K
L53 0.47
L52
R52 120
L51
R51 2.2K
VR51 20K
RF AGC
VR52 20K
RF AGC
Q51 RTIN141C
Q52 RTIN141C
C3 0.01
C2 0.01
C1 0.22/50
L3 6F16263A2
C10 0.01
R12 5.6K
C11 1800P
L4 6F16262A1
C12 18P
R16 3.3K
L5 6F16259A1
C13 0.01
C14 22P
CF2 SFE5.5MB
C15 22P
L6 18μ
R24 1.5K
R18 560
R19 390
L7 18
L8 33
R21 560
R22 470
R20 10K
C16 2.2/50
R17 1.5K
CF3 TPS5.5MW
C17 12P
Q2 2SA1235
CN1
11 10 9 8 7 6 5 4 3 2 1
AGC CTL V
AGC CTL U
IF IN
GND
RF AGC OUT
AFT OUT
VPV VIDEO OUT
VCC(+9V)
VIDEO OUT
GND
AUDIO OUT

VIF UNIT 6B00667A1

B (POWER SUPPLY) LINE

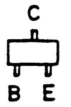
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL CAPACITORS IN μF 50 WV (J)
ALL INDUCTORS IN μH (K)

VIF UNIT
SCHEMATIC DIAGRAM
NO. 22-16 V110228M

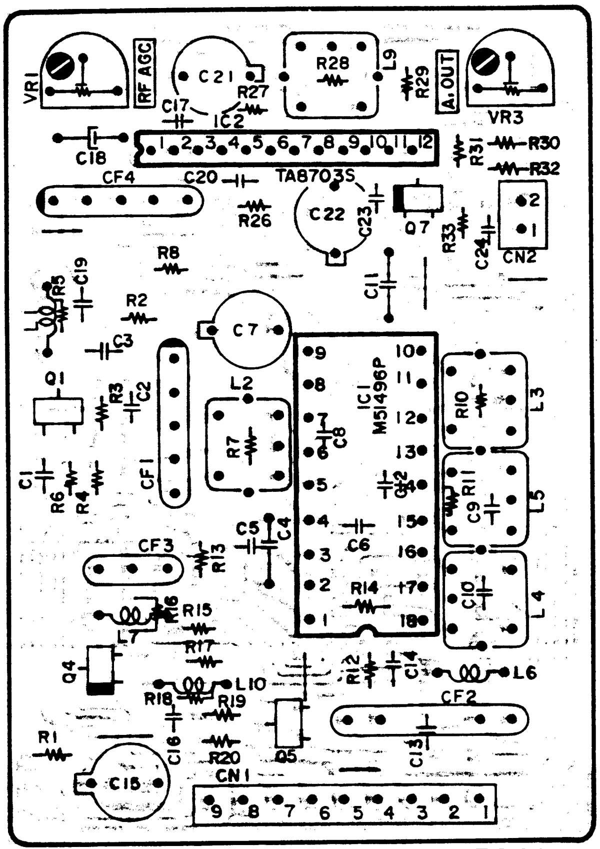

TO MAIN PCB
CN1
1 2 3 4 5 6 7 8 9 10 11
R21
R22
Q2
L8
R18
L7
R20
C16
L52
R51
R52
C17
C15
C14
L6
CF3
CF2
R17
R19
C2
L51
C5
L53
Q1
C1
C3
R6
L1
R3
R24
R7
CF1
R5
C6
L5
R8
R16
C13
IC1 M51496P
L4
C12
C7
C4
R2
C8
Q52
Q51
R1
C10
C11
VR52
VR51
R12
VR2
L3
C18
A-OUT LEVEL
UHF
VHF

VIF UNIT 6B00667A1

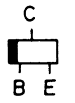
CHIP TRANSISTOR



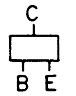
MF : 2SA1235F
N1 : RT1N141C
JC : 2SC2735


VR1
RF AGC
C21
R27
C17
IC2
R28
L9
R29
A.OUT
VR3
C18
1 2 3 4 5 6 7 8 9 10 11 12
R31
R30
R32
CF4
C20
TA8703S
R26
C22
C23
Q7
R33
C24
CN2
2
1
R8
C19
R5
L1
R2
C3
C7
C11
Q1
R3
C2
CF1
L2
R7
IC1
M51496P
C8
R10
L3
C1
R6
R4
R11
C9
L5
C5
C4
C6
CF3
R13
R14
C10
L4
L7
R16
R15
R17
Q4
R12
C14
L6
L10
R18
R19
CF2
R1
C16
R20
Q5
C13
C15
CN1
9 8 7 6 5 4 3 2 1

VIF UNIT(EKN) 6C01758A1



2SA1235



2SC2735

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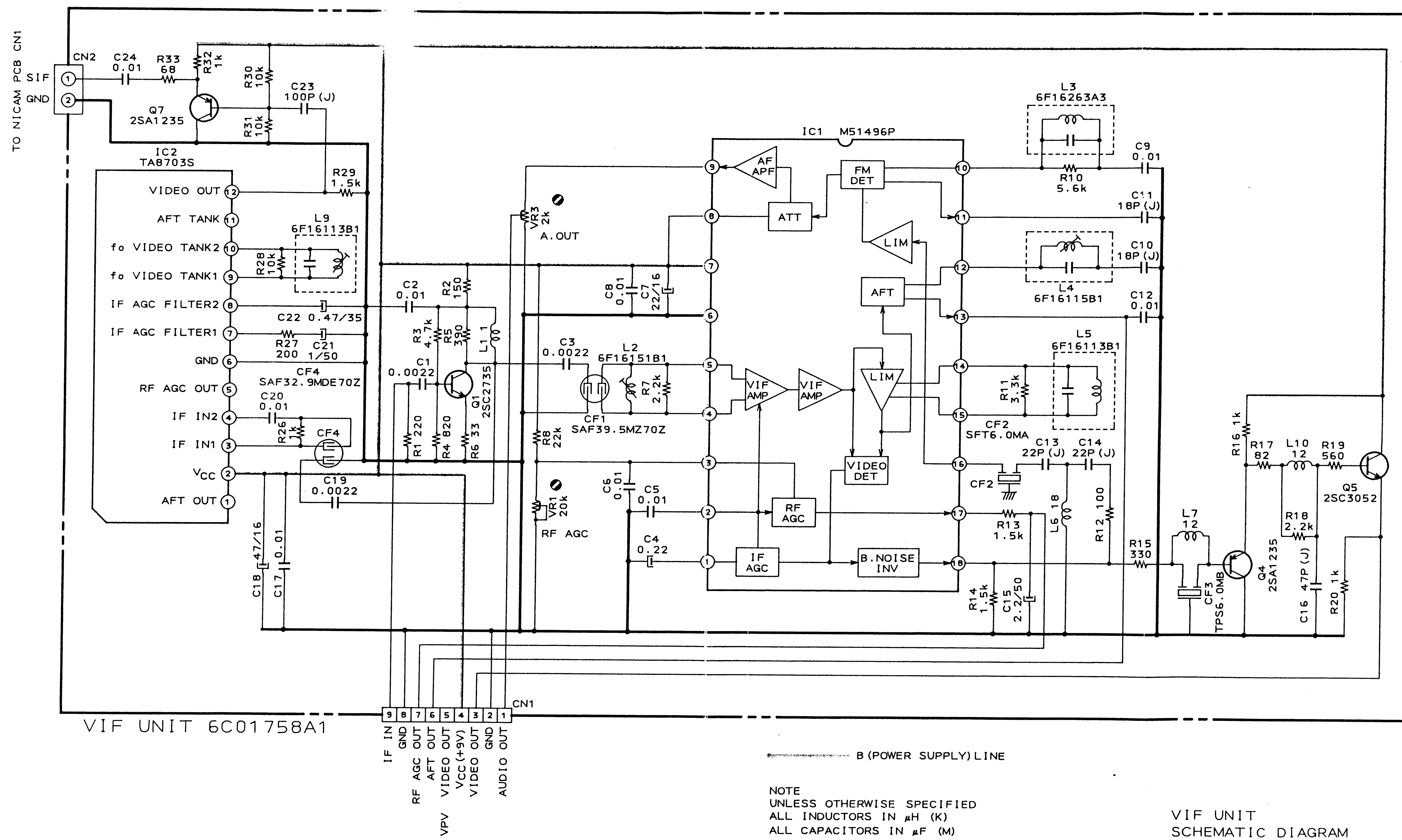
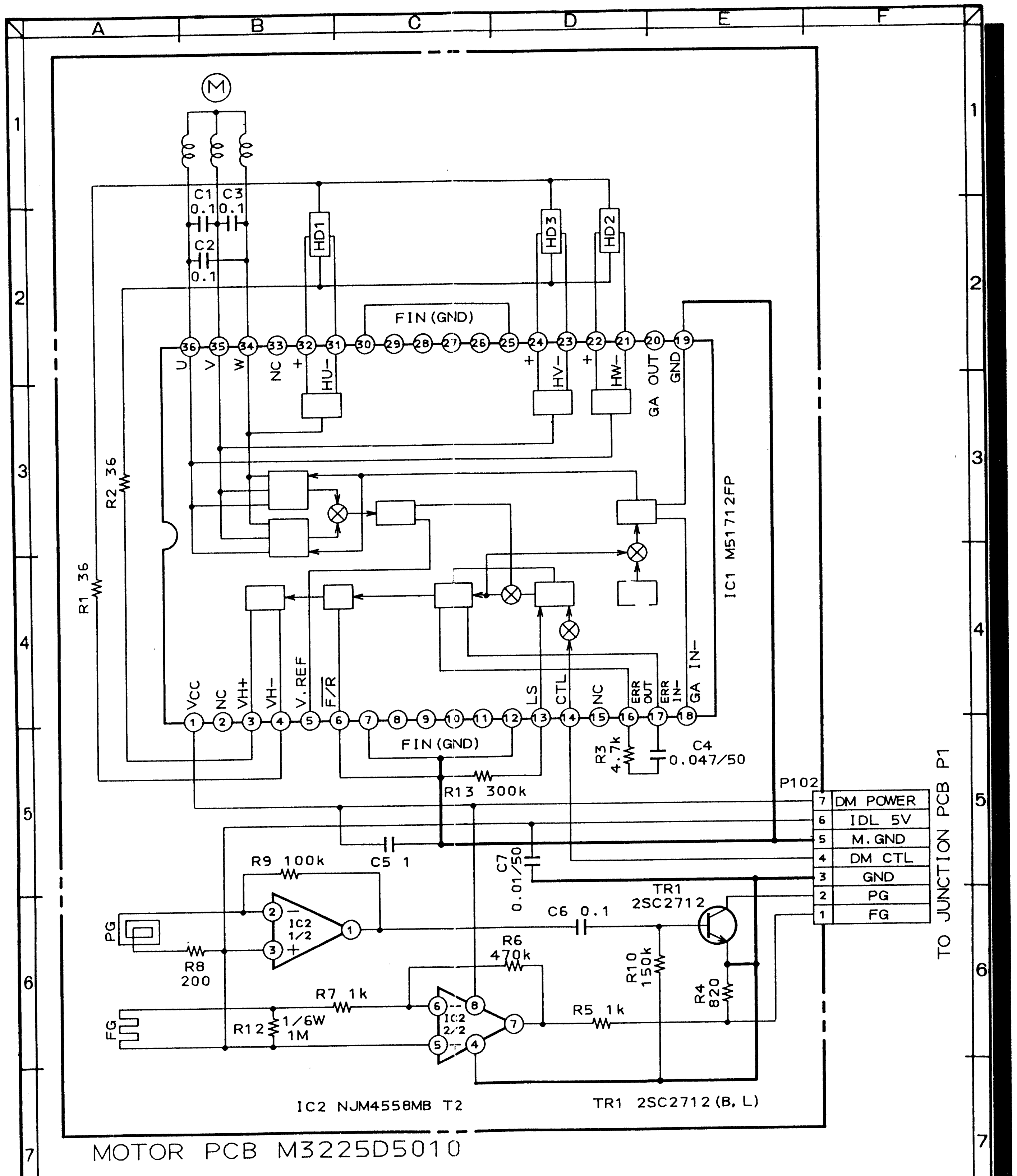

TO NICAM PCB CN1
SIF
GND
CN2
C24 0.01
R33 68
R32 1k
R30 10k
R31 10k
C23 100P (J)
Q7 2SA1235
IC2 TA8703S
VIDEO OUT 12
AFT TANK 11
fo VIDEO TANK2 10
fo VIDEO TANK1 9
IF AGC FILTER2 8
IF AGC FILTER1 7
GND 6
RF AGC OUT 5
IF IN2 4
IF IN1 3
VCC 2
AFT OUT 1
R29 1.5k
L9 6F16113B1
R28 10k
C22 0.47/35
R27 200
C21 1/50
CF4 SAF32.9MDE70Z
C20 0.01
R26 1k
CF4
C19 0.0022
C18 47/16
C17 0.01
C2 0.01
R2 150
R3 4.7k
R5 390
L1 1
C1 0.0022
R1 220
R4 820
R6 33
Q1 2SC2735
VR3 2k
A.OUT
VR1 20k
RF AGC
R8 22k
C3 0.0022
L2 6F16151B1
R7 2.2k
CF1 SAF39.5MZ70Z
C8 0.01
C7 22/16
C6 0.01
C5 0.01
C4 0.22
IC1 M51496P
AF APF
ATT
FM DET
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV
L3 6F16263A3
R10 5.6k
C9 0.01
C11 18P (J)
L4 6F16115B1
C10 18P (J)
C12 0.01
L5 6F16113B1
R11 3.3k
CF2 SFT6.0MA
C13 22P (J)
C14 22P (J)
CF2
R13 1.5k
L6 18
R12 100
R14 1.5k
C15 2.2/50
R15 330
L7 12
CF3 TPS6.0MB
Q4 2SA1235
R16 1k
R17 82
L10 12
R19 560
Q5 2SC3052
R18 2.2k
C16 47P (J)
R20 1k
CN1
9 IF IN
8 GND
7 RF AGC OUT
6 AFT OUT
5 VIDEO OUT
4 VCC (+9V)
3 VIDEO OUT
2 GND
1 AUDIO OUT
VPV
VIF UNIT 6C01758A1

B (POWER SUPPLY) LINE

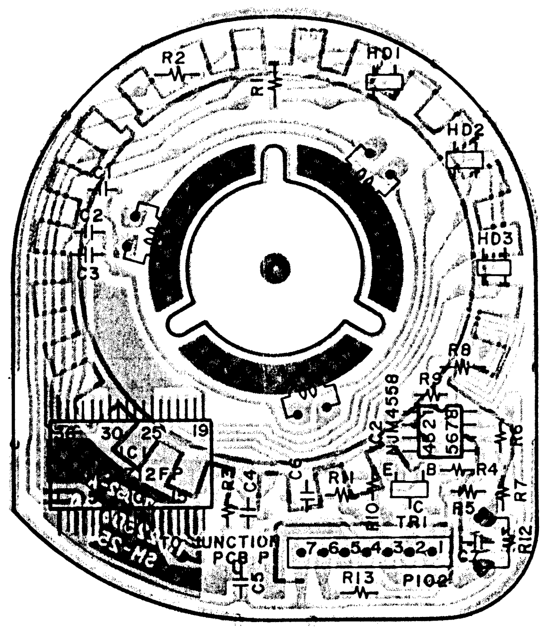
NOTE
UNLESS OTHERWISE SPECIFIED
ALL INDUCTORS IN μH (K)
ALL CAPACITORS IN μF (M)
ALL RESISTORS IN OHMS 1/10W (J)

VIF UNIT
SCHEMATIC DIAGRAM
NO.22-17 V110229M

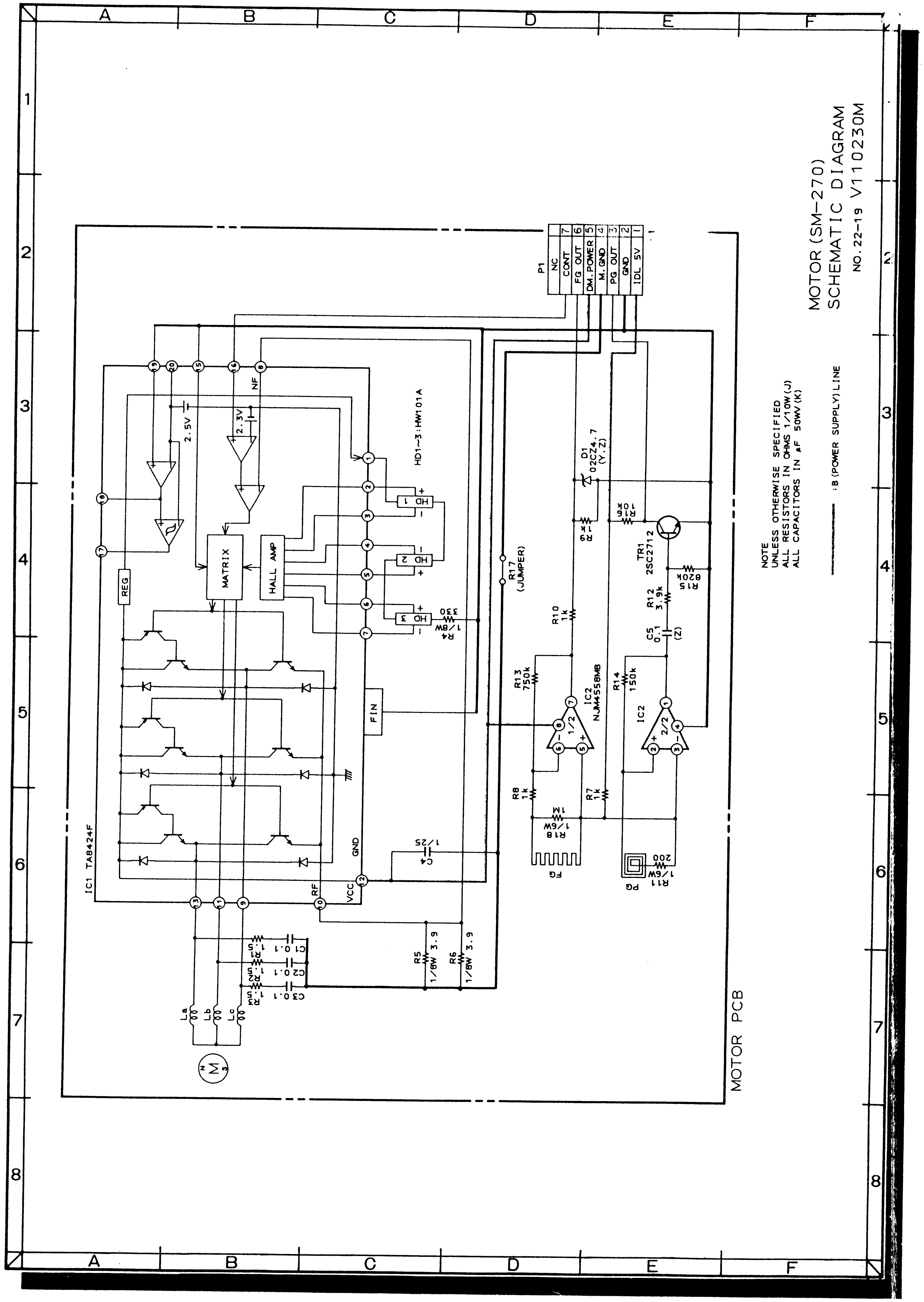

M
C1 0.1
C3 0.1
C2 0.1
HD1
HD3
HD2
FIN (GND)
36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19
U V W NC + HU−
+ HV− + HW− GA OUT GND
R2 36
R1 36
IC1 M51712FP
VCC NC VH+ VH− V.REF F/R LS CTL NC ERR OUT ERR IN− GA IN−
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
FIN (GND)
R3 4.7k
C4 0.047/50
R13 300k
P102
7 DM POWER
6 IDL 5V
5 M.GND
4 DM CTL
3 GND
2 PG
1 FG
TO JUNCTION PCB P1
R9 100k
C5 1
C7 0.01/50
TR1 2SC2712
C6 0.1
PG
IC2 1/2
R8 200
R6 470k
R10 150k
R4 820
R7 1k
R5 1k
IC2 2/2
FG
R12 1/6W 1M
IC2 NJM4558MB T2
TR1 2SC2712 (B, L)
MOTOR PCB M3225D5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 16WV (J)

MOTOR (SM−250)
SCHEMATIC DIAGRAM
NO. 22-18 V109508F


R2
R1
HD1
HD2
HD3
C1
C2
C3
R8
R9
R4
R5
R7
R12
IC2 NJM4558
IC1 M51712FP
R3
C4
R11
R10
C
TR1
E
B
JUNCTION PCB P
P102
R13
C5
7 6 5 4 3 2 1
SM-250

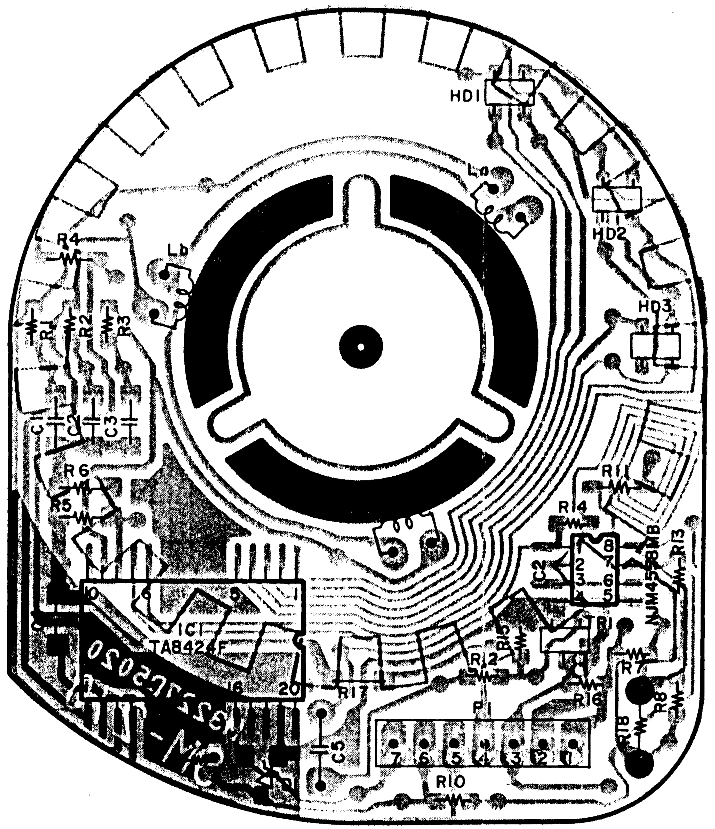
DRUM MOTOR M3225D5010
(P02)


A
B
C
D
E
F
1
2
3
4
5
6
7
8
P1
NC 7
CONT 6
FG OUT 5
DM.POWER 4
M.GND 3
PG OUT 2
GND 1
IDL 5V
HD1~3:HW101A
IC1 TA8424F
REG
MATRIX
HALL AMP
FIN
GND
VCC
RF
NF
2.5V
2.3V
HD 1
HD 2
HD 3
R4 330 1/8W
D1 02CZ4.7 (Y,Z)
R16 10k
R9 6.8k
TR1 2SC2712
R15 820k
R12 3.9k
R17 (JUMPER)
R10 1k
C5 0.1 (Z)
R13 750k
IC2 NJM4558MB
1/2
2/2
R14 150k
R8 1k
R7 1k
R18 1M 1/6W
R11 200 1/6W
FG
PG
C4 1/25
R5 1/8W 3.9
R6 1/8W 3.9
C1 0.1
C2 0.1
C3 0.1
R1
R2
R3
La
Lb
Lc
M
MOTOR PCB

MOTOR (SM-270)
SCHEMATIC DIAGRAM
NO.22-19 V110230M

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W(J)
ALL CAPACITORS IN µF 50WV(K)

——— :B (POWER SUPPLY) LINE


HD1
HD2
HD3
La
Lb
Lc
R4
R1
R2
R3
C1
C2
C3
R6
R5
R11
R14
IC2
NJM4558MB
R13
IC1
TA8424
R12
R17
R15
R16
R7
R8
R18
TR1
C5
P1
R10
M3227D5020

DRUM MOTOR PCB(SM-270)
M3227D5020JI

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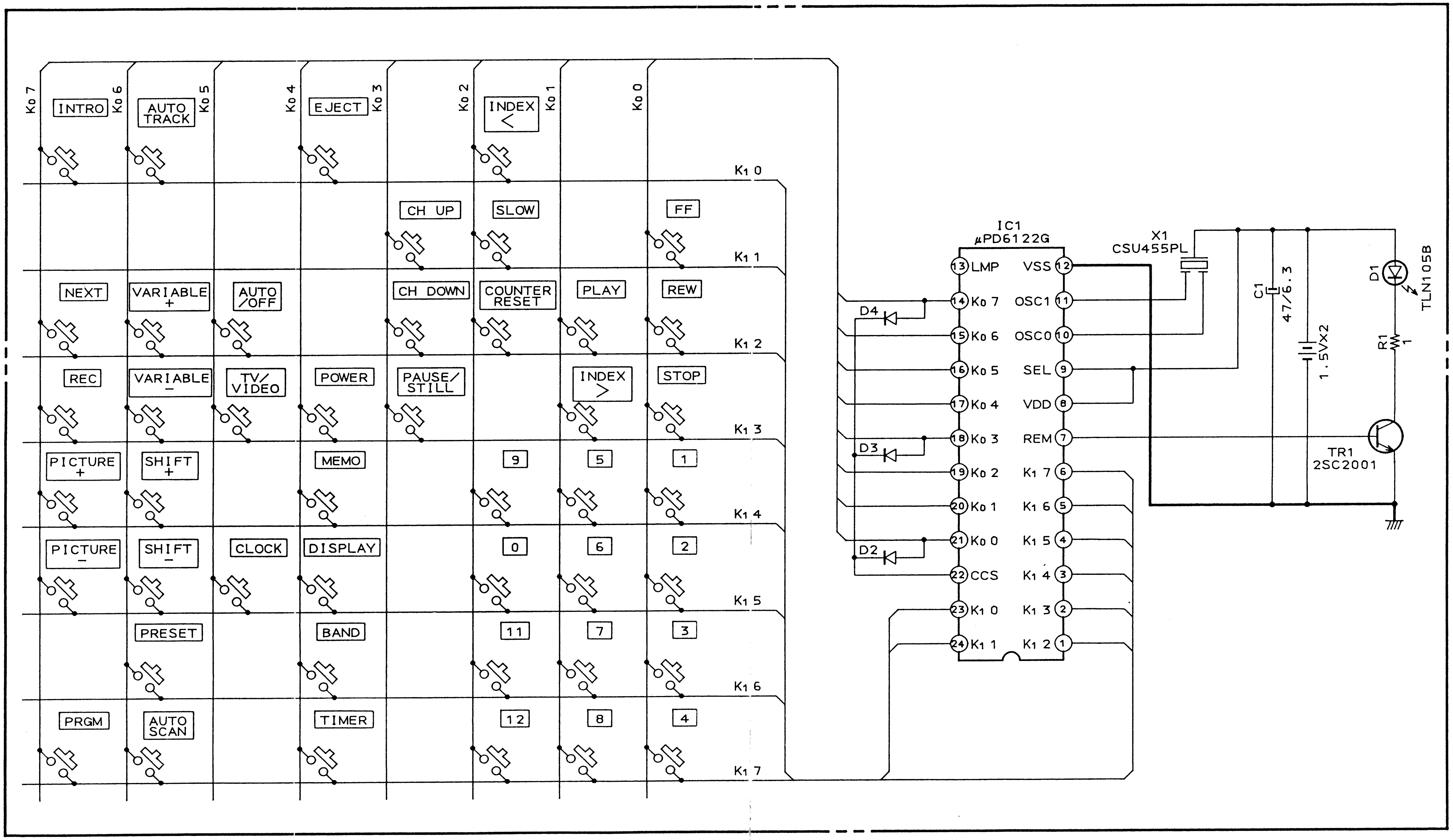
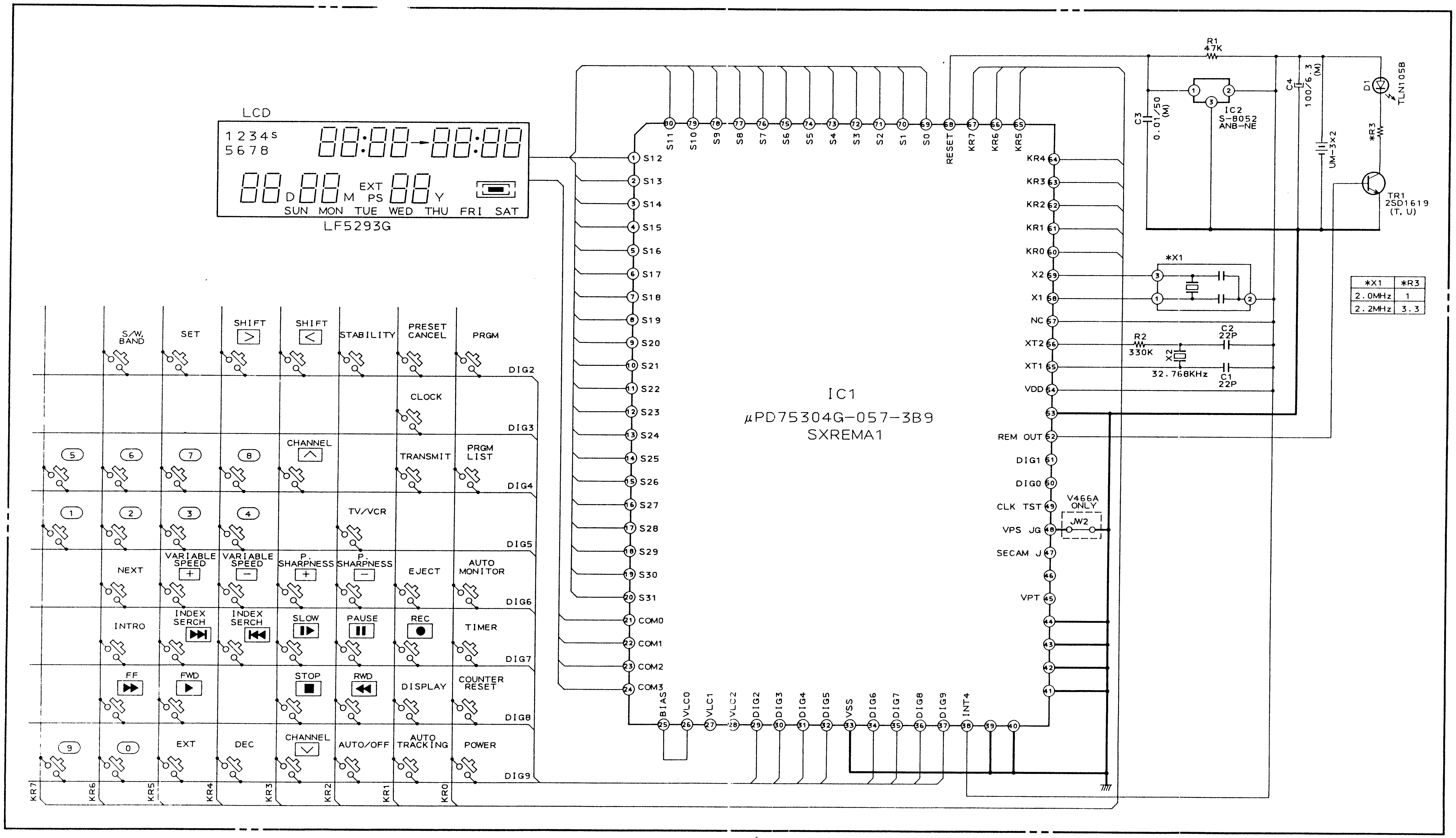

Ko 7
Ko 6
Ko 5
Ko 4
Ko 3
Ko 2
Ko 1
Ko 0
INTRO
AUTO TRACK
EJECT
INDEX <
K1 0
CH UP
SLOW
FF
K1 1
NEXT
VARIABLE +
AUTO /OFF
CH DOWN
COUNTER RESET
PLAY
REW
K1 2
REC
VARIABLE −
TV/ VIDEO
POWER
PAUSE/ STILL
INDEX >
STOP
K1 3
PICTURE +
SHIFT +
MEMO
9
5
1
K1 4
PICTURE −
SHIFT −
CLOCK
DISPLAY
0
6
2
K1 5
PRESET
BAND
11
7
3
K1 6
PRGM
AUTO SCAN
TIMER
12
8
4
K1 7
D4
D3
D2
IC1
μPD6122G
13 LMP
14 Ko 7
15 Ko 6
16 Ko 5
17 Ko 4
18 Ko 3
19 Ko 2
20 Ko 1
21 Ko 0
22 CCS
23 K1 0
24 K1 1
VSS 12
OSC1 11
OSC0 10
SEL 9
VDD 8
REM 7
K1 7 6
K1 6 5
K1 5 4
K1 4 3
K1 3 2
K1 2 1
X1
CSU455PL
C1
47/6.3
1.5Vx2
D1
TLN105B
R1
1
TR1
2SC2001

REMO−CON PCB N4008C5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(J)

REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.22-20 N400801F

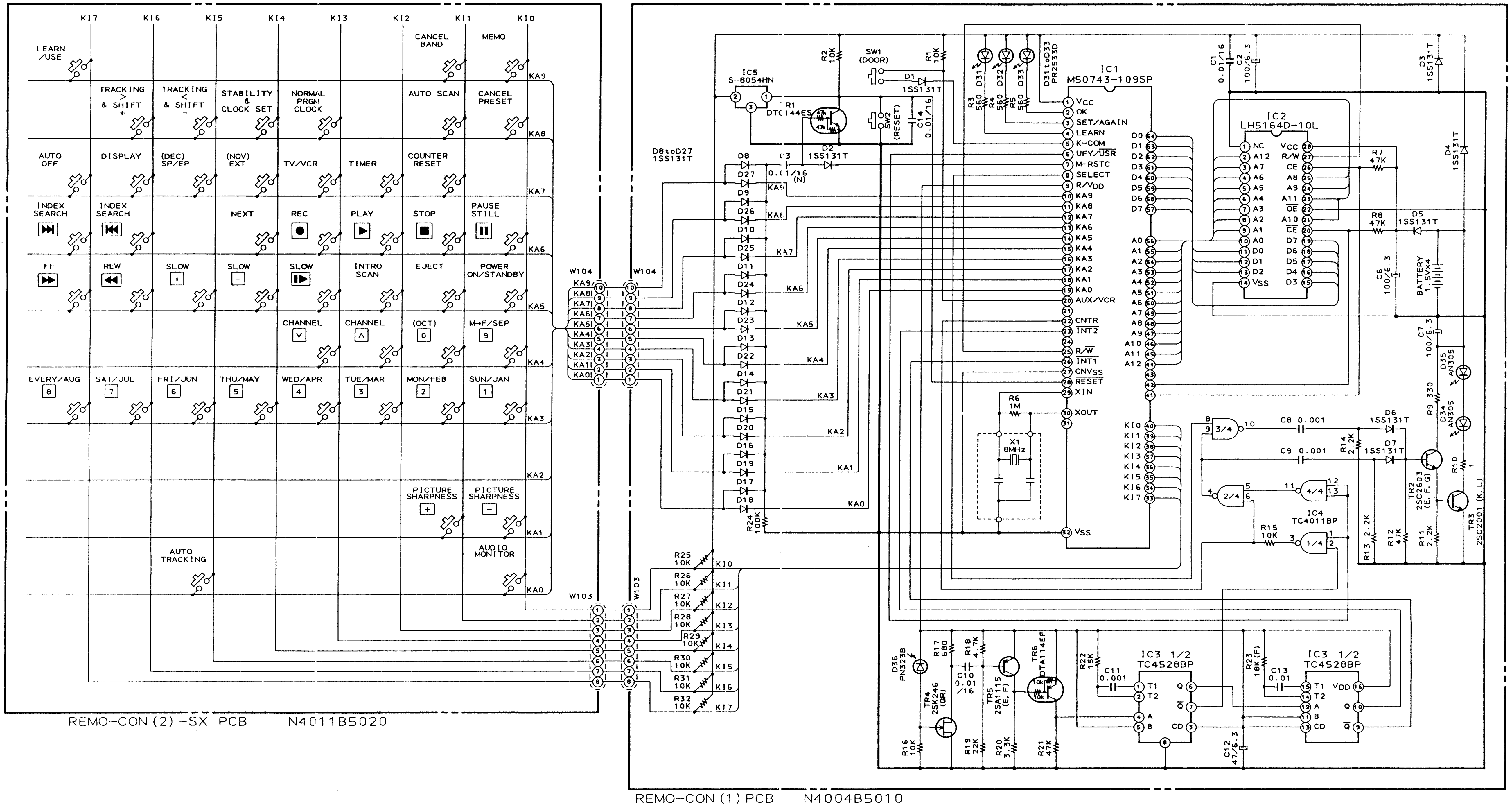

LCD
1234S
5678
EXT
D M PS Y
SUN MON TUE WED THU FRI SAT
LF5293G
IC1
µPD75304G-057-3B9
SXREMA1
S12 S13 S14 S15 S16 S17 S18 S19 S20 S21 S22 S23 S24 S25 S26 S27 S28 S29 S30 S31
COM0 COM1 COM2 COM3
S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S0 RESET KR7 KR6 KR5
KR4 KR3 KR2 KR1 KR0 X2 X1 NC XT2 XT1 VDD
REM OUT
DIG1 DIG0
CLK TST
VPS JG
SECAM J
VPT
BIAS VLC0 VLC1 VLC2 DIG2 DIG3 DIG4 DIG5 VSS DIG6 DIG7 DIG8 DIG9 INT4
R1 47K
C3 0.01/50 (M)
IC2 S-8052 ANB-NE
C4 100/6.3 (M)
D1 TLN105B
*R3
UM-3x2
TR1 2SD1619 (T, U)
*X1
C2 22P
R2 330K
X2
32.768KHz
C1 22P
V466A ONLY
JW2
S/W BAND
SET
SHIFT >
SHIFT <
STABILITY
PRESET CANCEL
PRGM
DIG2
CLOCK
DIG3
5 6 7 8
CHANNEL ^
TRANSMIT
PRGM LIST
DIG4
1 2 3 4
TV/VCR
DIG5
NEXT
VARIABLE SPEED +
VARIABLE SPEED −
P. SHARPNESS +
P. SHARPNESS −
EJECT
AUTO MONITOR
DIG6
INTRO
INDEX SERCH ▶▶|
INDEX SERCH |◀◀
SLOW
PAUSE
REC
TIMER
DIG7
FF
FWD
STOP
RWD
DISPLAY
COUNTER RESET
DIG8
9 0
EXT
DEC
CHANNEL
AUTO/OFF
AUTO TRACKING
POWER
DIG9
KR7 KR6 KR5 KR4 KR3 KR2 KR1 KR0

*X1	*R3
2.0MHz	1
2.2MHz	3.3

REMOCON (LA) PCB N4009A5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN µF 50WV (J)

REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.22-21 N400903M



KI7
KI6
KI5
KI4
KI3
KI2
KI1
KI0
LEARN /USE
CANCEL BAND
MEMO
TRACKING > & SHIFT +
TRACKING < & SHIFT −
STABILITY & CLOCK SET
NORMAL PRGM CLOCK
AUTO SCAN
CANCEL PRESET
AUTO OFF
DISPLAY
(DEC) SP/EP
(NOV) EXT
TV/VCR
TIMER
COUNTER RESET
INDEX SEARCH
NEXT
REC
PLAY
STOP
PAUSE STILL
FF
REW
SLOW +
SLOW −
SLOW
INTRO SCAN
EJECT
POWER ON/STANDBY
CHANNEL V
CHANNEL Λ
(OCT) 0
M→F/SEP 9
EVERY/AUG 8
SAT/JUL 7
FRI/JUN 6
THU/MAY 5
WED/APR 4
TUE/MAR 3
MON/FEB 2
SUN/JAN 1
PICTURE SHARPNESS +
PICTURE SHARPNESS −
AUTO TRACKING
AUDIO MONITOR
KA9
KA8
KA7
KA6
KA5
KA4
KA3
KA2
KA1
KA0
W104
W103
REMO-CON (2)-SX PCB
N4011B5020
IC5 S-8054HN
R1 DTC144ES
R2 10K
SW1 (DOOR)
SW2 (RESET)
R1 10K
D1 1SS131T
D2 1SS131T
C14 0.01/16
C3 0.01/16 (N)
D8toD27 1SS131T
D31 D32 D33
D31toD33 PR2533D
R3 560
R4 560
R5 560
IC1 M50743-109SP
VCC
OK
SET/AGAIN
LEARN
K-COM
UFY/USR
M-RSTC
SELECT
R/VDD
AUX/VCR
CNTR
INT2
R/W
INT1
CNVSS
RESET
XIN
XOUT
VSS
R6 1M
X1 8MHz
R24 10K
R25 10K
R26 10K
R27 10K
R28 10K
R29 10K
R30 10K
R31 10K
R32 10K
C1 0.01/16
C2 100/6.3
IC2 LH5164D-10L
R7 47K
R8 47K
D3 1SS131T
D4 1SS131T
D5 1SS131T
C6 100/6.3
BATTERY 1.5Vx4
C7 100/6.3
R9 330
D35 AN305
D34 AN305
C8 0.001
C9 0.001
D6 1SS131T
D7 1SS131T
R14 2.2K
R10 1
TR2 2SC2603 (E,F,G)
TR3 2SC2001 (K,L)
IC4 TC4011BP
R15 10K
R13 2.2K
R12 47K
R11 2.2K
D36 PN323B
R17 680
R18 4.7K
C10 0.01 /16
TR4 2SK246 (GR)
TR5 2SA1115 (E,F)
TR6 DTA114EF
R16 10K
R19 22K
R20 3.3K
R21 47K
R22 15K
C11 0.001
IC3 1/2 TC4528BP
R23 18K (F)
C13 0.01
C12 47/6.3
REMO-CON (1) PCB
N4004B5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (J)

REMOTE CONTROL UNIT SCHEMATIC DIAGRAM

NO. 22-22 N400402M

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AKAI

MODEL VS-422EOH
MODEL VS-425EM/EOG/EOH
MODEL VS-427EK,467EK,485EK

SCHEMATIC DIAGRAMS AND PC BOARDS

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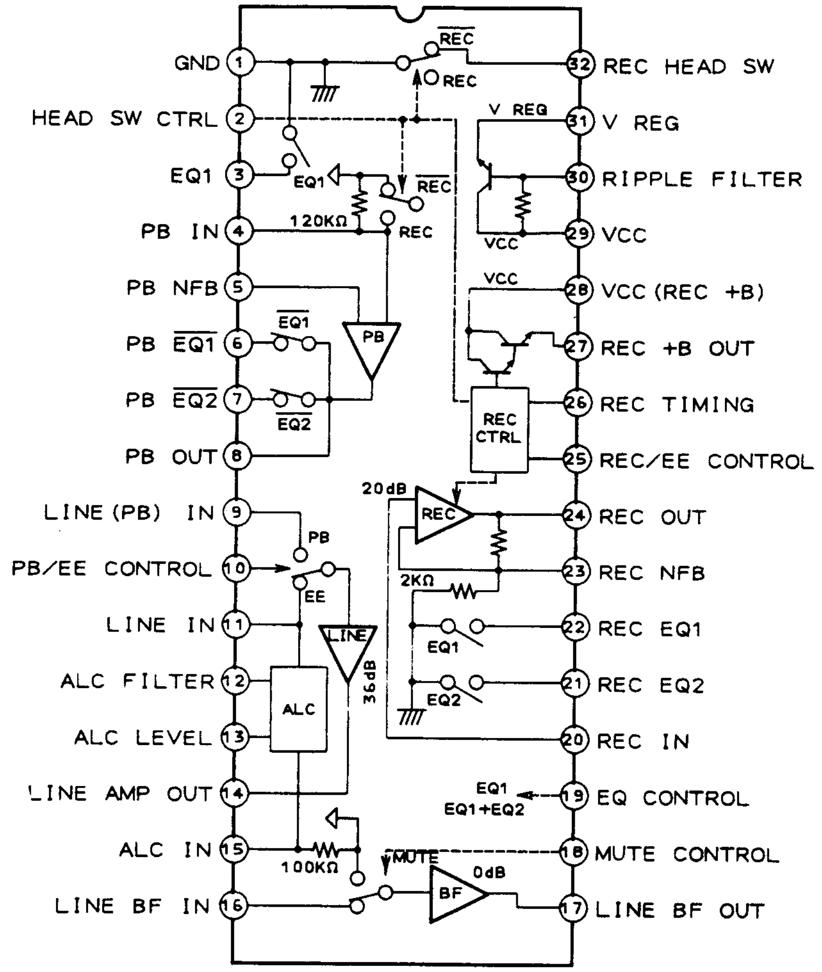
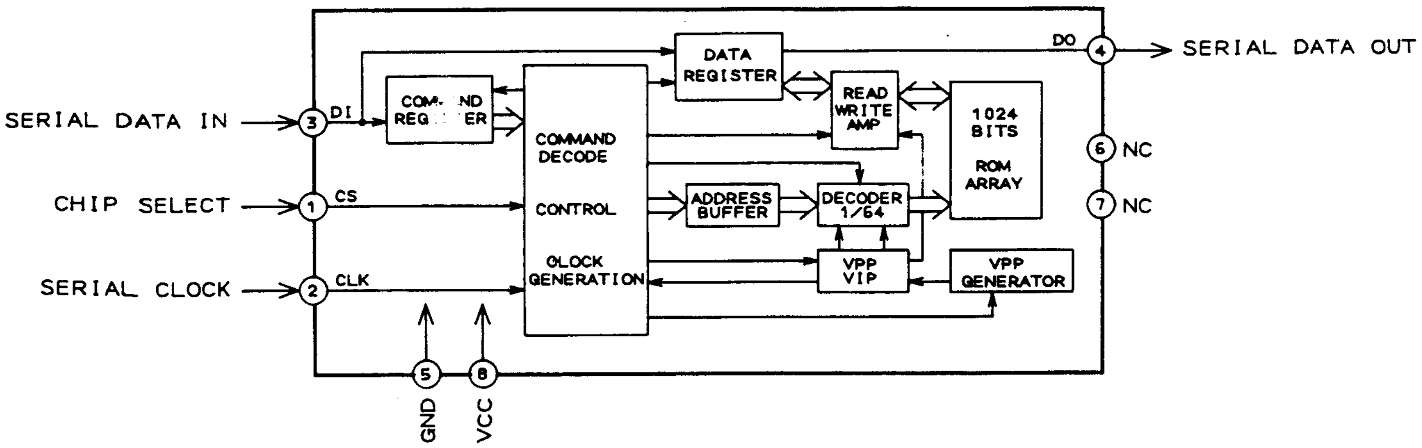
BA7765AS (AUDIO SIGNAL REC/PB AMPLIFIER)


GND 1
HEAD SW CTRL 2
EQ1 3
PB IN 4
PB NFB 5
PB EQ1 6
PB EQ2 7
PB OUT 8
LINE (PB) IN 9
PB/EE CONTROL 10
LINE IN 11
ALC FILTER 12
ALC LEVEL 13
LINE AMP OUT 14
ALC IN 15
LINE BF IN 16
32 REC HEAD SW
31 V REG
30 RIPPLE FILTER
29 VCC
28 VCC (REC +B)
27 REC +B OUT
26 REC TIMING
25 REC/EE CONTROL
24 REC OUT
23 REC NFB
22 REC EQ1
21 REC EQ2
20 REC IN
19 EQ CONTROL
18 MUTE CONTROL
17 LINE BF OUT
REC
REC
V REG
EQ1
REC
120KΩ
REC
VCC
VCC
EQ1
PB
EQ2
REC CTRL
20dB
REC
PB
EE
2KΩ
LINE
36dB
EQ1
EQ2
ALC
EQ1
EQ1+EQ2
100KΩ
MUTE
0dB
BF

BR93C46 (64×16BIT EEP ROM)


SERIAL DATA IN
CHIP SELECT
SERIAL CLOCK
3 DI
1 CS
2 CLK
COM ND REG ER
COMMAND DECODE
CONTROL
CLOCK GENERATION
DATA REGISTER
READ WRITE AMP
1024 BITS
ROM ARRAY
ADDRESS BUFFER
DECODER 1/64
VPP VIP
VPP GENERATOR
DO
4
SERIAL DATA OUT
6 NC
7 NC
5 GND
8 VCC

★ INFORMATION

SYMBOLS OF MODEL NAME FOR PRIMARY DESTINATION

Symbol indicates the destination of the units as listed below.

Symbol	Classification	Principal Destination	System	
			Color	Broadcast
EA	S	Australia	PAL	B, G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D, K
EDI	E	China, Hong Kong	PAL	D, K, I
EG	E	Spain, Northern Europe, Other	PAL	B, G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong kong		
EM	E	Middle East	PAL	B,G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B,G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B, G
	V	Italy		
EOG	V	W.Germany	PAL	B, G
ES	E	South Africa, Ireland, Hong kong	PAL	I
EV	E	South-East Asia	PAL	B, G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B, G
EGN	E	Middle East	PAL, NTSC	B, G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Switzerland	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

Quick start function

This VCR contains the quick start function.

When a video tape is inserted into this VCR, the QUICK START indicator will automatically light on the front panel. This indicates that the VCR is in the quick start mode and that any function button pressed will operate immediately. If a function button is not pressed within 5 minutes, the indicator will disappear and the VCR will be released from the quick start mode. If the play or record button is pressed after the indicator has disappeared, there will be a short time before the VCR responds.

Automatic functions

This VCR contains the following auto functions.

1. Auto power on
   The VCR power is automatically turned on when the tape is inserted.
2. Auto play
   If the video tape's recording defeat tab has been removed, playback will begin automatically when the tape is inserted into the VCR.
3. Auto tape reject
   If a video tape with its recording defeat tab removed is loaded, the VCR will automatically eject it when the REC or TIMER button is pressed.
4. Power off eject
   Even when the VCR's power is off, pressing the EJECT button will turn the power on and eject the tape. Once ejected the power will be turned off automatically.
5. Auto counter display
   When the display mode is on, the tape counter will be displayed on the TV screen automatically during fast forward or rewind.
6. Auto rewind
   The video tape is automatically rewound when the end of the tape is reached during the play, recording or quick finder forward mode. (Auto rewind will not function during the next mode when it has been set after the timer recording, fast forward or recording mode.)
7. Auto dimmer display
   Between the hours of 23:00 and 6:00, if the VCR is not in use, the FL display is automatically dimmed to a lower light level.

Safety lock system (Remote control only)

This VCR's PLAY button can be locked to prevent access by small children.

This feature can be operated by the remote control only.

To lock: With the VCR POWER ON, press and hold the remote control's stop button for approx. 8 seconds. The safety lock indicator ⊸ will appear on the FL display to indicate that the VCR is locked.

To unlock: Press and hold the remote control's play button for approx. 8 seconds. The safety lock indicator will flash and disappear from the display.

Multi-language display

The language of your choice can be selected for the on-screen display. You can choose any one of the following languages:English, German, Spanish, French, Italian, Dutch, Finnish or Swedish. If a language is not selected, the VCR will select English automatically.

1) Press the AUTO/OFF button on the remote control unit. The language list will be displayed on the TV screen.
2) Select the disired number with the multi-function buttons.

Variable speed playback (Remote control only)

The VARIABLE SPEED + , − buttons make playback speed increase or decrease possible with the remote control.

The tape speed can be increased up to 15 times the normal playback speed in the forward or reverse directions.

In the forward direction, the speed can also be decreased to 1/12 of the normal playback speed.

Press the remote control's VARIABLE SPEED + or − button repeatedly during playback until you reach the desired speed.

During this mode, no sound will be heard.

Playback picture sharpness adjustment (Remote control only)

Playback picture sharpness adjustment is now possible with the remote control.

Press the PICTURE SHARPNESS + button repeatedly to sharpen the picture or press the − button to soften the picture.

INTRO SCAN system (Remote control only)

This VCR is capable of quickly fast forwarding (or rewinding) to the beginning of each recorded segment on a tape, briefly playing back that segment , and then fast forwarding (or rewinding) to the next segment.

This system works in combination with the control signal which is recorded at the beginning of each recorded segment.

Press the INTRO SCAN button on the remote control during the "play", "stop", "fast forward" or "rewind" mode. The VCR will immediately fast forward (or rewind) the tape to the beginning of the program and play back about the first 8 seconds. The VCR will then again fast forward (or rewind) the tape to the beginning of the next recorded segment and again play back the first 8 seconds of the program.

This operation continues until the end of the tape (or the beginning of the tape) or another mode(such as PLAY or STOP)is chosen. During the INTRO SCAN mode, the index number will be displayed on the TV screen and flash on the FL display. This number will advance each time an index code is found. The INDX indicator will light on the FL display during the intro scan mode.

While intro scan is searching for the beginning of the program the fast forward (or rewind) indicator lights and the play indicator flashes. During the 8 seconds of playback, the play indicator lights and the fast forward (or the rewind) indicator flashes.

INDEX SEARCH System (Remote control only)

Use the index search mode to jump directly to the beginning of any recorded segment, within 99 segments of your starting point, in either the forward or reverse direction.

Using the index code (automatically added when tapes are recorded on this VCR) as a guide, The VCR forwards or rewinds the video tape to the segment you have chosen and begins playback automatically. Because the index search feature uses the index code that is added to the tape when programmes are originally recorded, this feature will only operate with tapes that include this index code.

Press the INDEX SEARCH forward or reverse button the number of index codes you wish to skip on the remote control.

The tape will be fast forwarded or quickly rewound to the desired segment and playback will begin automatically.

During the index search mode the index number will be displayed on the TV screen and flash on the FL display. This number will decrease each time an index code is found.

TEST MODE

To set the VCR to the TEST MODE, press and hold both the "POWER" and "EJECT" buttons on the front panel, then plug in the AC power cord. The TEST MODE can also be set by pressing the SYSTEM RESET button while pressing both the "POWER" and "EJECT" buttons.
When the TEST MODE has been engaged, the QUICK START indicator turns on even when the POWER is turned OFF.
The TEST MODE can be cancelled by disconnecting the AC power cord or simply by pressing the SYSTEM RESET button.

1) TRACKING POSITION DISPLAY
In the SP play mode, pressing the manual TRACKING buttons during playback or when the auto tracking system is operating displays tracking position data. Data is displayed in 64 steps (in hexadecimal numbers from "00" to "3F") in the channel number indicator segment on the FL display.
Pressing the PICTURE SHARPNESS + button sets tracking to the maximum "3F" tracking position directly during playback and pressing the – button sets it to the minimum "00" position.
Pressing the PLAY button during playback sets tracking to the center position automatically.
Pressing the MEMO button will change the FL display's tracking indication to the center of the tracking range. (This tracking data will be kept in EP-ROM IC even when the TEST MODE has been reset. Therefore, do not forget to return to the original center position "1F". Press the manual TRACKING buttons to set the indication to "1F", then press the MEMO button.)

2) FL DISPLAY CONFIRMATION
By pressing the QUICK TIMER "M" button on the front panel, all indicator segments in the FL display will light up.

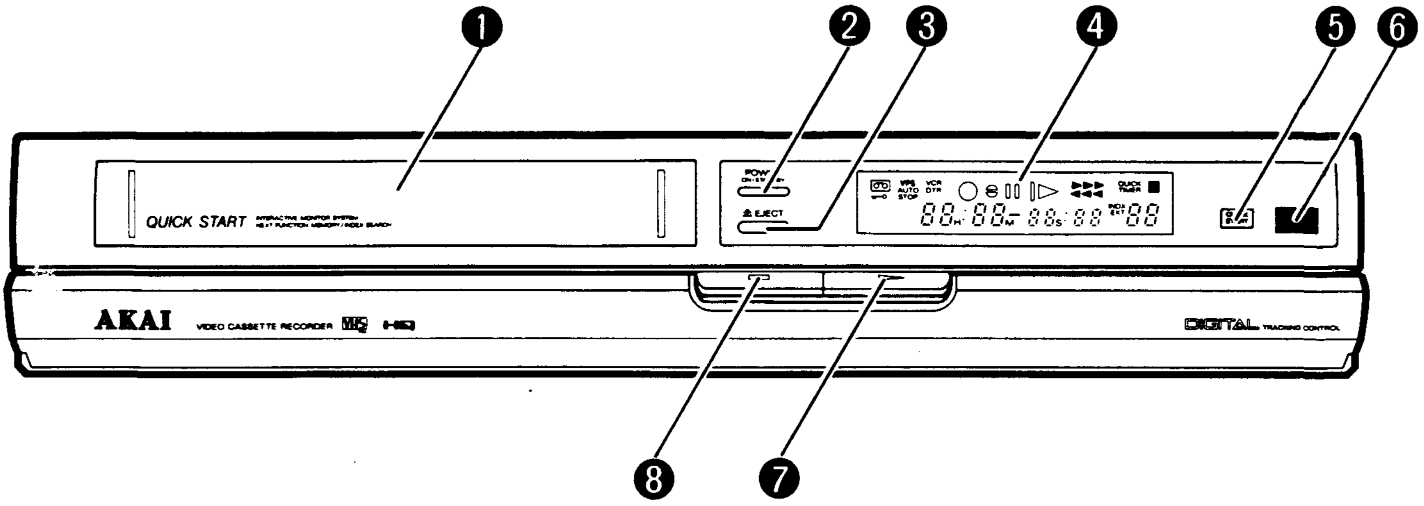
3) TIMER FUNCTION CONFIRMATION
During the TEST MODE, the clock's minute display will advance by one every second to facilitate quick timer function confirmation.

4) SUSPENTION OF THE TAPE PROTECTION SYSTEM
When the VCR is not in the TEST MODE, the REC PAUSE mode will be released after 30 minutes in order to protect the tape. The "STILL" mode will also be released after 5 minutes. During the TEST MODE however, the tape protection system will not operate.

5) AUTO PRESETTING OF THE TV STATIONS
Once you have pressed the "PRESET" and "AUTO SCAN" buttons during the TEST MODE, TV stations will be memorized automatically when the system finds TV stations.

I. CONTROLS

1-1. FRONT PANEL (VS-422EOH)


❶
❷
❸
❹
❺
❻
QUICK START
POW
EJECT
AKAI
VIDEO CASSETTE RECORDER
DIGITAL TRACKING CONTROL
❽
❼

❶ **Cassette loading slot**
Load the VHS video tape here.

❷ **POWER ON/STANDBY button**
To turn the VCR on or off (standby mode).

❸ **⏏ EJECT button**
To eject the video tape. The tape can be ejected even when the VCR's power is off.

❹ **FL (Fluorescent) display**
Provides visual reference of the VCR's operating modes.

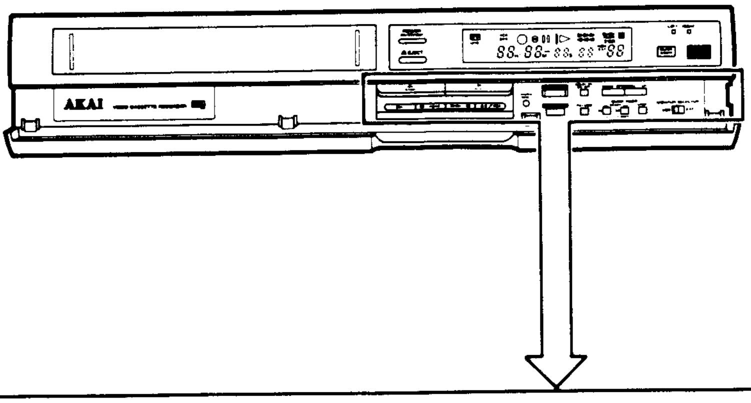
❺ **QUICK START indicator**
Lights when the VCR is in the quick start mode.

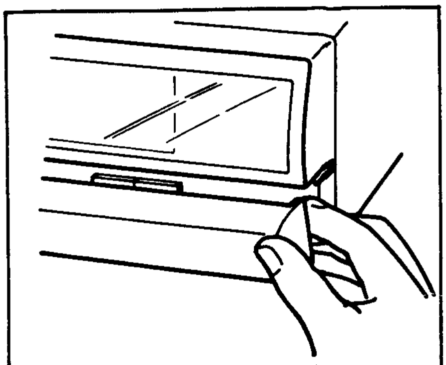
❻ **Remote sensor window**
For reception of the remote control's signal.

❼ ▷ **Play button**
To start video tape playback.

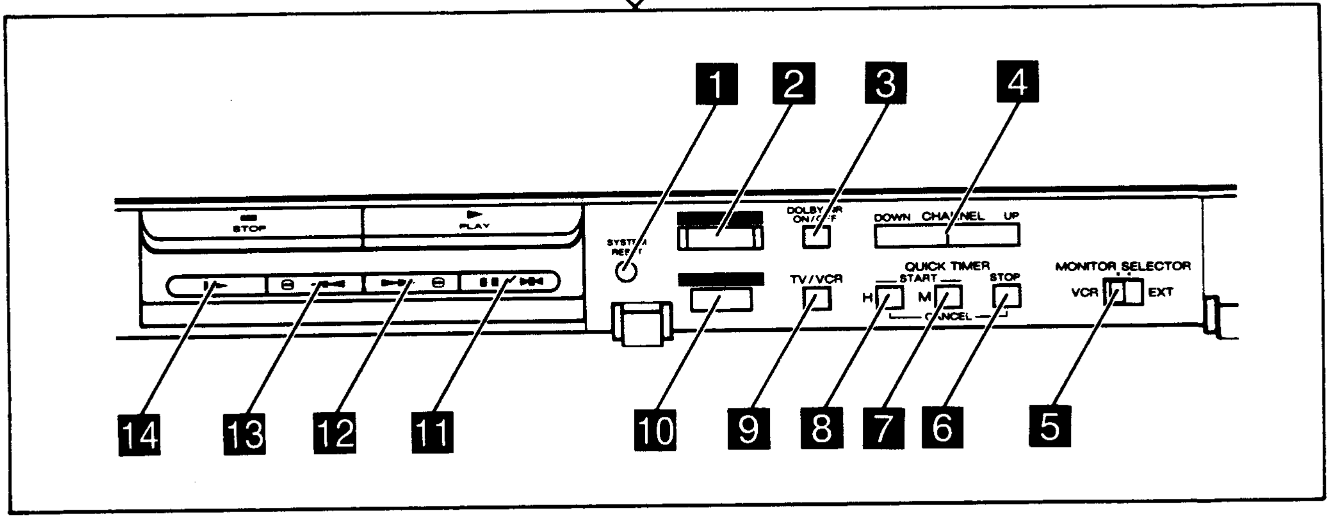
❽ ▭ **Stop button**
To stop the video tape.

1-2. SUB PANEL (VS-422EOH)





To open the fornt-panel door, pull on its upper right-hand corner.



1 SYSTEM RESET button
To reset the VCR if malfunction has occurred. Clock and programme data will be cancelled when the SYSTEM RESET button is pressed.

2 REC (Record) button
To start recording.

3 DOLBY NR ON/OFF button
To turn the Dolby NR system (B-type) on or off for recording or playback.

4 CHANNEL buttons
To select channels.

5 MONITOR SELECTOR switch
To set the VCR for output of the VCR's internal signal (VCR position) or for output of a signal received externally (EXT position). When this selector is set to the EXT position, only the signal received from an external source connected to the external input (VIDEO IN/AUDIO IN) terminals will be output by the VCR.
For audio and picture output when using the VCR, this selector must be set to the VCR position.

6 QUICK TIMER STOP button
To set the stop time for quick timer recording. Also used to cancel programmes preset for quick timer recording.

7 QUICK TIMER M (Minute) button
To set the start time minutes for quick timer recording.

8 QUICK TIMER H (Hour) button
To set the start time hour for quick timer recording.
Also used to cancel programmes preset for quick timer recording.

9 TV/VCR button
To watch a programme on a different TV channel than the one you are recording.

10 TIMER button
To set or cancel the timer recording mode.

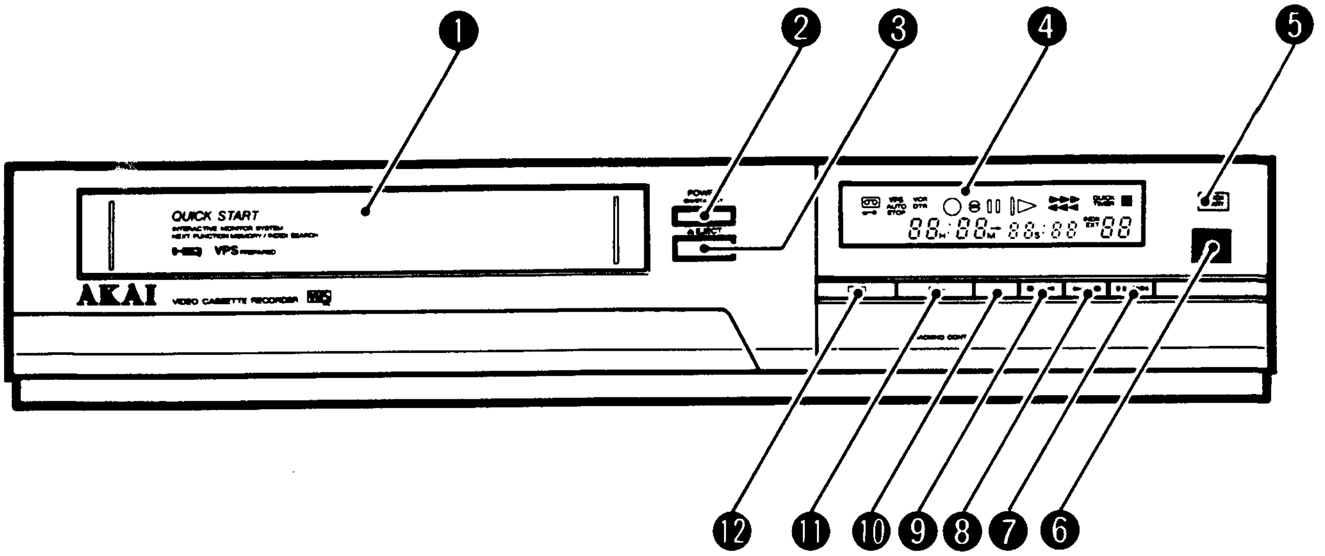
11 (▮▮/▶◀) **Pause/still button**
To set the VCR to the recording pause mode from the recording or stop mode, or to set it to the still mode from the playback mode.

12 [▶▶ ⊖] **Fast forward button**
To fast forward the video tape. Also to start quick finder forward during playback.

13 [⊖ ◀◀] **Rewind button**
To rewind the video tape. Also to start quick finder reverse during playback.

14 (▮▶] **Slow button**
To start slow motion playback.

1-3. FRONT PANEL (VS-425EM,EOG,EOH)



❶ **Cassette loading slot**
Load the VHS video tape here.

❷ **POWER ON/STANDBY button**
To turn the VCR on or off (standby mode).

❸ **⏏ EJECT button**
To eject the video tape. The tape can be ejected even when the VCR's power is off.

❹ **FL (Fluorescent) display**
Provides visual reference of the VCR's operating modes.

❺ **QUICK START indicator**
Lights when the VCR is in the quick start mode.

❻ **Remote sensor window**
For reception of the remote control's signal.

❼ ▮▮/▶▮◀ **Pause/still button**
To set the VCR to the recording pause mode from the recording or stop mode, or to set it to the still mode from the playback mode.

❽ ▶▶ ⊖ **Fast forward button**
To fast forward the video tape. Also to start quick finder forward during playback.

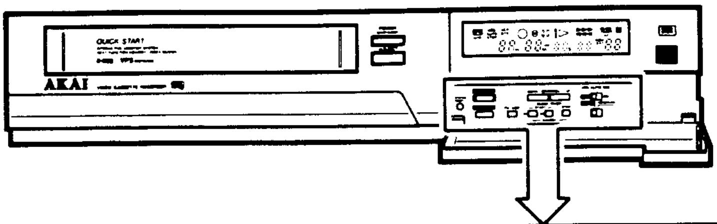
❾ ⊖ ◀◀ **Rewind button**
To rewind the video tape. Also to start quick finder reverse during playback.

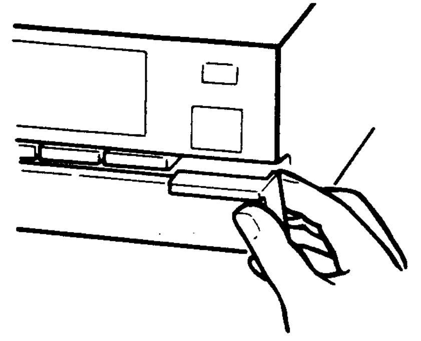
❿ ▮▶ **Slow button**
To start slow motion playback.

⓫ ▷ **Play button**
To start video tape playback.

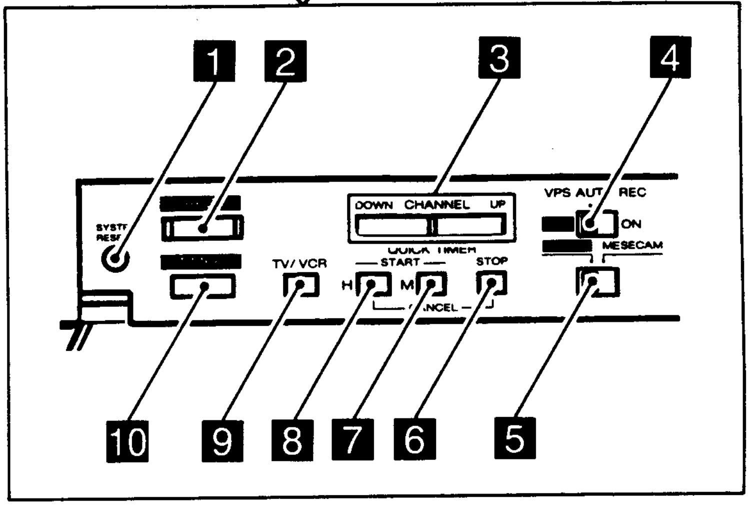
⓬ ▭ **Stop button**
To stop the video tape.

1-4. SUB PANEL (VS-425EM,EOG,EOH)





To open the sub-panel door, pull on its upper right-hand corner.



1 SYSTEM RESET button
To reset the VCR if malfunction has occurred. Clock and programme data will be cancelled when the SYSTEM RESET button is pressed.

2 REC (Record) button
To start recording.

3 CHANNEL buttons
To select channels.

4 VPS AUTO REC switch (except VS-425EM)
To set the VPS video programme system on or off. (This feature is optional and requires a VPS adapter available from your video dealer.)

5 Video mode switch (VS-425EOH ONLY)
To select the type of signal to be played back or recorded.
PAL: Set to this position for PAL color system playback or recording. (This switch should normally be set to this position).
MESECAM: Set to this position for MESECAM color system playback or recording. (MESECAM: Middle East SECAM system B/G.)

6 QUICK TIMER STOP button
To set the stop time for quick timer recording. Also used to cancel programmes preset for quick timer recording.

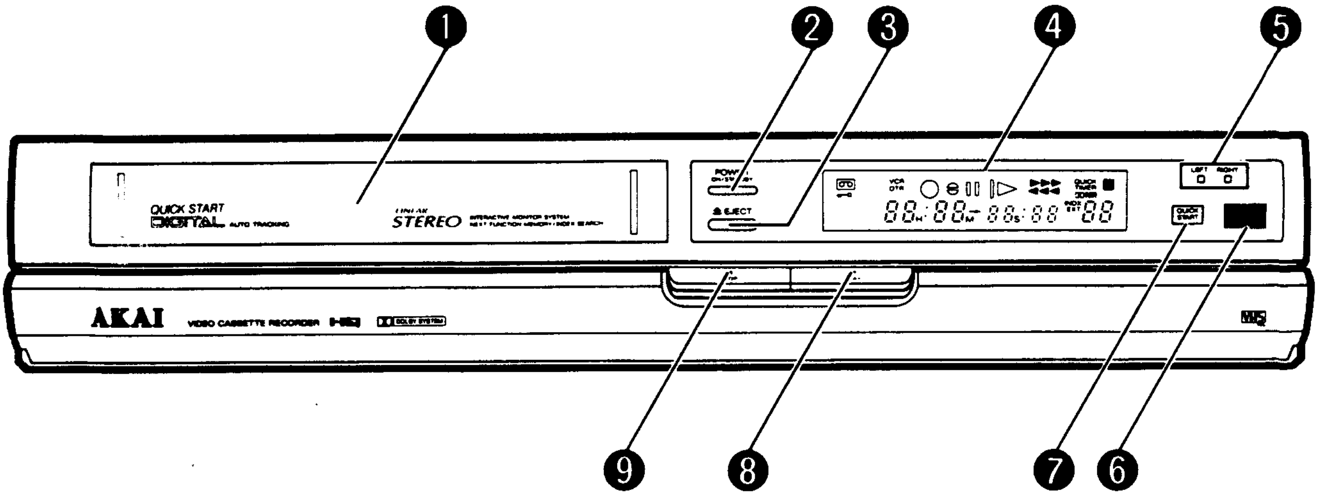
7 QUICK TIMER M (Minute) button
To set the start time minutes for quick timer recording.

8 QUICK TIMER H (Hour) button
To set the start time hour for quick timer recording.
Also used to cancel programmes preset for quick timer recording.

9 TV/VCR button
To watch a programme on a different TV channel than the one you are recording.

10 TIMER button
To set or cancel the timer recording mode.

1-5. FRONT PANEL (VS-427EK, 467EK)


①
②
③
④
⑤
QUICK START
DIGITAL AUTO TRACKING
STEREO
POWER
EJECT
LEFT RIGHT
QUICK START
AKAI
VIDEO CASSETTE RECORDER
⑨
⑧
⑦
⑥

① **Cassette loading slot**
Load the VHS video tape here.

② **POWER ON/STANDBY button**
To turn the VCR on or off (standby mode).

③ **⏏ EJECT button**
To eject the video tape. The tape can be ejected even when the VCR's power is off.

④ **FL (Fluorescent) display**
Provides visual reference of the VCR's operating modes.

⑤ **Audio output indicators**
Indicate audio output mode.

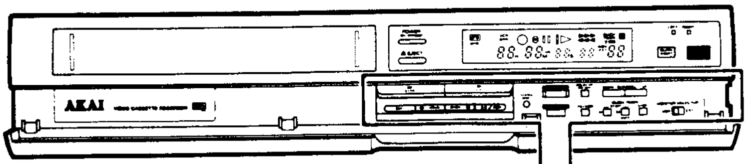
⑥ **Remote sensor window**
For reception of the remote control's signal.

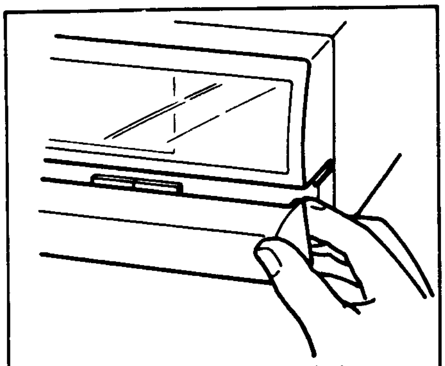
⑦ **QUICK START indicator**
Lights when the VCR is in the quick start mode.

⑧ PLAY **Play button**
To start video tape playback

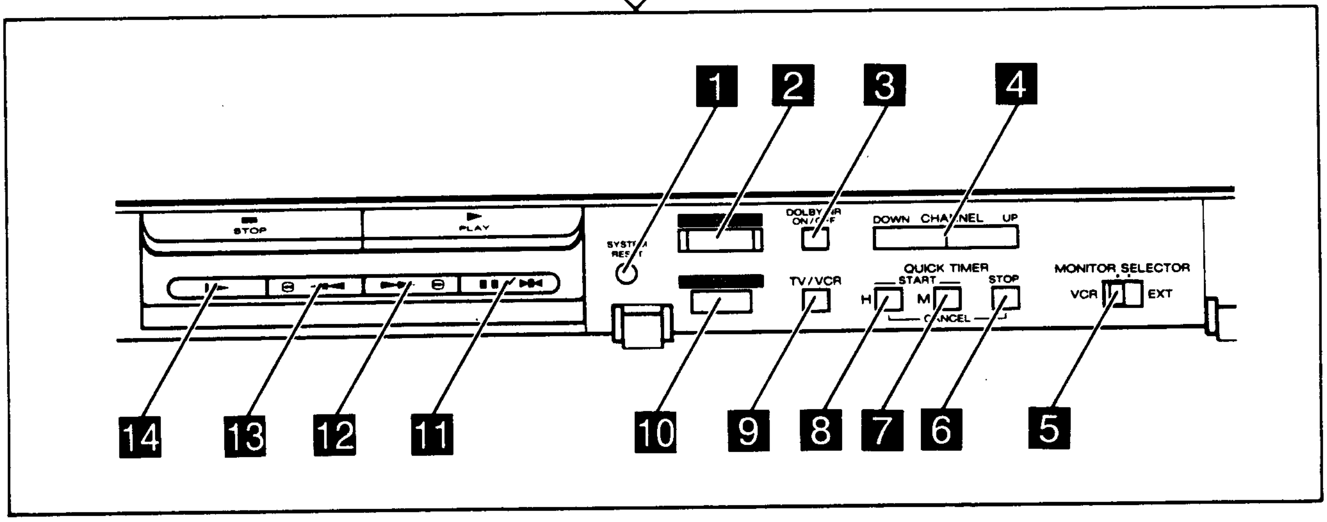
⑨ STOP **Stop button**
To stop the video tape.

1-6. SUB PANEL (VS-427EK, 467EK)





To open the fornt-panel door, pull on its upper right-hand corner.



1 SYSTEM RESET button
To reset the VCR if malfunction has occurred. Clock and programme data will be cancelled when the SYSTEM RESET button is pressed.

2 REC (Record) button
To start recording.

3 DOLBY NR ON/OFF button
To turn the Dolby NR system (B-type) on or off for recording or playback.

4 CHANNEL buttons
To select channels.

5 MONITOR SELECTOR switch
To set the VCR for output of the VCR's internal signal (VCR position) or for output of a signal received externally (EXT position). When this selector is set to the EXT position, only the signal received from an external source connected to the external input (VIDEO IN/AUDIO IN) terminals will be output by the VCR.
For audio and picture output when using the VCR, this selector must be set to the VCR position.

6 QUICK TIMER STOP button
To set the stop time for quick timer recording. Also used to cancel programmes preset for quick timer recording.

7 QUICK TIMER M (Minute) button
To set the start time minutes for quick timer recording.

8 QUICK TIMER H (Hour) button
To set the start time hour for quick timer recording.
Also used to cancel programmes preset for quick timer recording.

9 TV/VCR button
To watch a programme on a different TV channel than the one you are recording.

10 TIMER button
To set or cancel the timer recording mode.

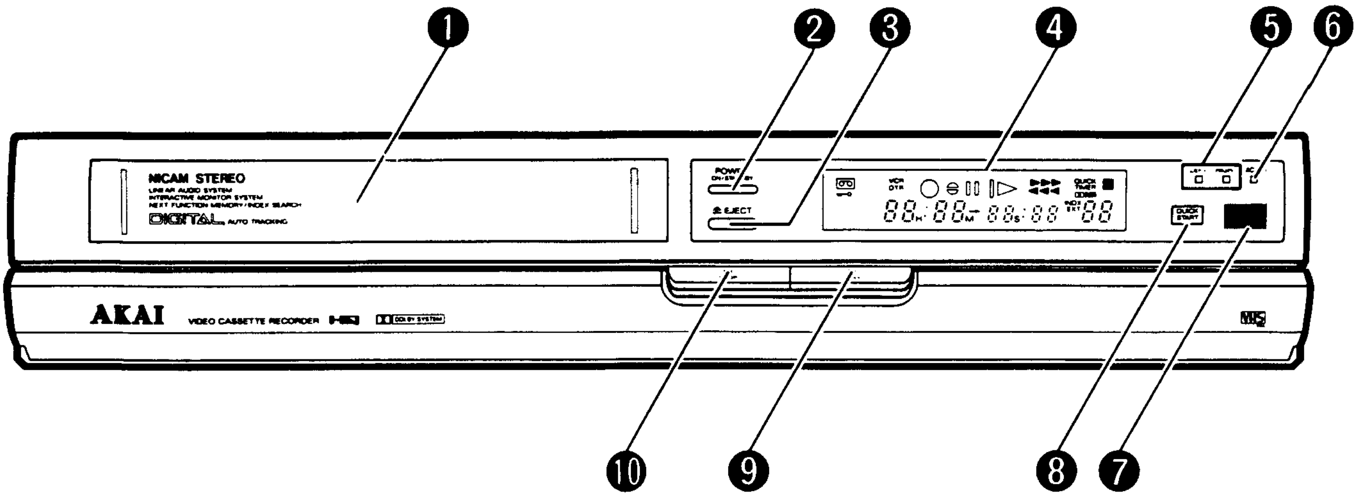
11 (▮▮/▶▮◀) Pause/still button
To set the VCR to the recording pause mode from the recording or stop mode, or to set it to the still mode from the playback mode.

12 [▶▶ ⊖] Fast forward button
To fast forward the video tape. Also to start quick finder forward during playback.

13 [⊖ ◀◀] Rewind button
To rewind the video tape. Also to start quick finder reverse during playback.

14 (▮▶] Slow button
To start slow motion playback.

1-7. FRONT PANEL (VS-485EK)


①
②
③
④
⑤
⑥
NICAM STEREO
DIGITAL AUTO TRACKING
POWER ON/STANDBY
EJECT
QUICK START
AKAI
VIDEO CASSETTE RECORDER
⑩
⑨
⑧
⑦

① **Cassette loading slot**
Load the VHS video tape here.

② **POWER ON/STANDBY button**
To turn the VCR on or off (standby mode).

③ **⏏ EJECT button**
To eject the video tape. The tape can be ejected even when the VCR's power is off.

④ **FL (Fluorescent) display**
Provides visual reference of the VCR's operating modes.

⑤ **Audio output indicators**
Indicate audio output mode.

⑥ **NICAM indicator**
Lights when a NICAM broadcast is received.

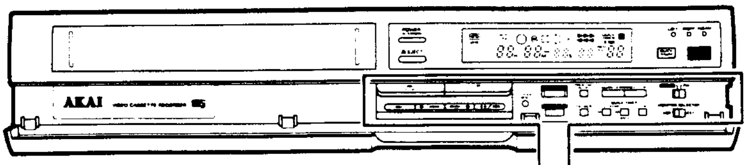
⑦ **Remote sensor window**
For reception of the remote control's signal.

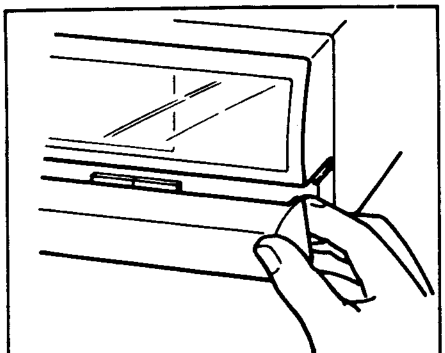
⑧ **QUICK START indicator**
Lights when the VCR is in the quick start mode.

⑨ ► PLAY **Play button**
To start video tape playback

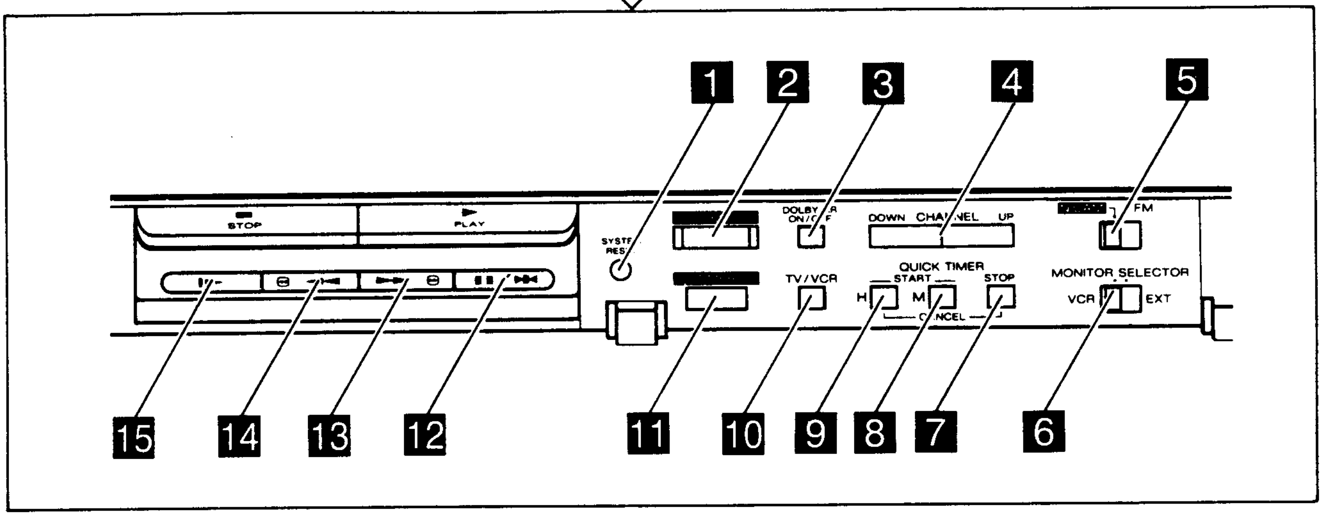
⑩ ■ STOP **Stop button**
To stop the video tape.

1-8. SUB PANEL (VS-485EK)





To open the fornt-panel door, pull on its upper right-hand corner.



1 SYSTEM RESET button
To reset the VCR if malfunction has occurred. Clock and programme data will be cancelled when the SYSTEM RESET button is pressed.

2 REC (Record) button
To start recording.

3 DOLBY NR ON/OFF button
To turn the Dolby NR system (B-type) on or off for recording or playback.

4 CHANNEL buttons
To select channels.

5 NICAM switch
To select VCR audio reception NICAM or regular TV sound (FM).

6 MONITOR SELECTOR switch
To set the VCR for output of the VCR's internal signal (VCR position) or for output of a signal received externally (EXT position). When this selector is set to the EXT position, only the signal received from an external source connected to the external input (VIDEO IN, AUDIO IN) terminals will be output by the VCR.
For audio and picture output when using the VCR, this selector must be set to the VCR position.

7 QUICK TIMER STOP button
To set the stop time for quick timer recording. Also used to cancel programmes preset for quick timer recording.

8 QUICK TIMER M (Minute) button
To set the start time minutes for quick timer recording.

9 QUICK TIMER H (Hour) button
To set the start time hour for quick timer recording.
Also used to cancel programmes preset for quick timer recording.

10 TV/VCR button
To watch a programme on a different TV channel than the one you are recording.

11 TIMER button
To set or cancel the timer recording mode.

12 (▮▮/▶▮◀) Pause/still button
To set the VCR to the recording pause mode from the recording or stop mode, or to set it to the still mode from the playback mode.

13 [▶▶ ⊖] Fast forward button
To fast forward the video tape. Also to start quick finder forward during playback.

14 [⊖ ◀◀] Rewind button
To rewind the video tape. Also to start quick finder reverse during playback.

15 (▮▶] Slow button
To start slow motion playback.

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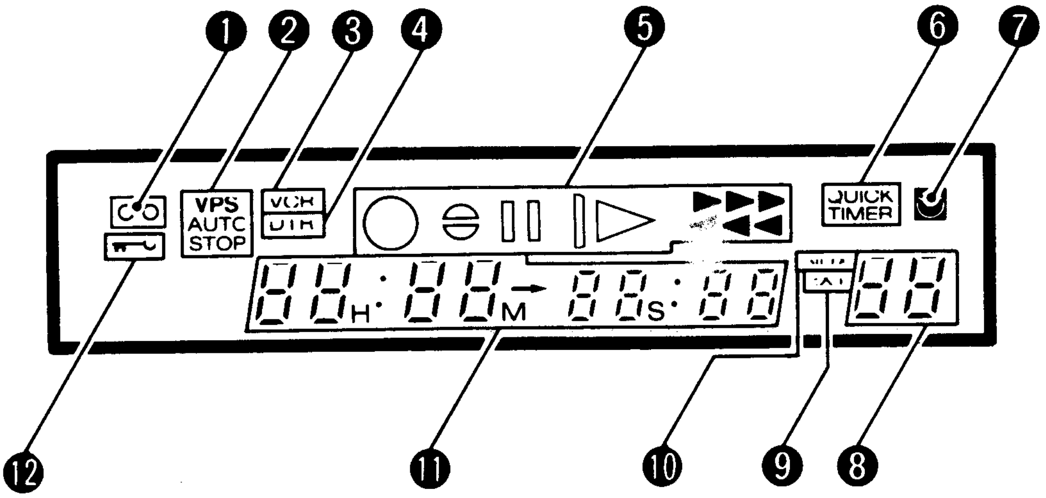
1-9. FL DISPLAY (VS-422EOH, 425EM, 425EOH)



❶ **Tape load indicator**
Lights when the video tape has been loaded.

❷ **VPS AUTO STOP indicator (except VS-425EM)**
VPS lights when the VPS AUTO REC switch is ON and a VPS signal is received.
AUTO STOP lights during the VPS auto stop mode.
(This feature is optional and requires a VPS adapter available from your video dealer.)

❸ **VCR mode indicator**
Lights when the TV/VCR button is set to VCR.

❹ **DTR (Digital Tracking) indicator**
Lights when digital auto tracking is operating.

❺ **Tape mode indicators**
Indicate what operation mode the video tape is in.

❻ **QUICK TIMER indicator**
Lights when the VCR is in the quick timer mode.

❼ **Timer indicator**
Lights when the VCR is in the timer recording mode.

❽ **Channel indicator**
Indicates the selected channel number. Also indicates the index number during index search, and programme number during intro scan.

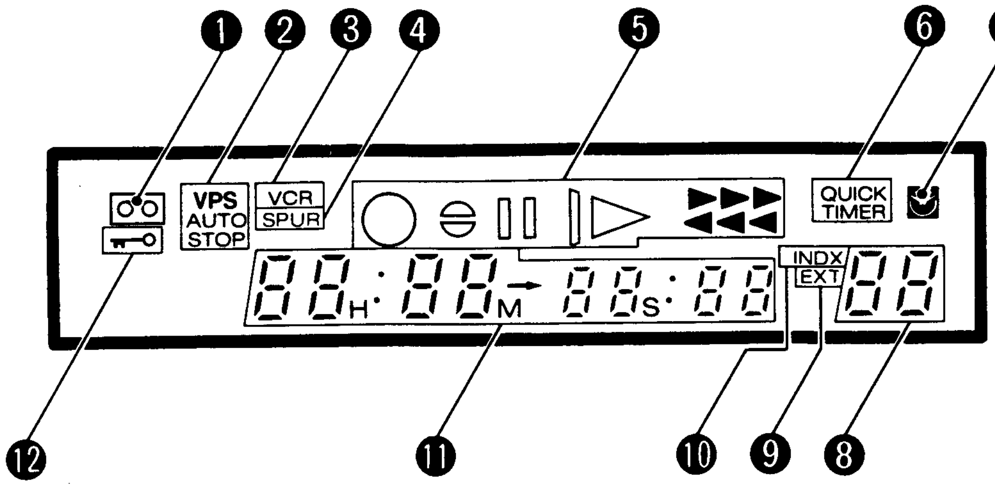
❾ **EXT (External) indicator**
Indicates that the VCR is set for external input.

❿ **INDX (Index) indicator**
Lights during index search, intro scan and when index codes are added to the tape during recording.

⓫ **Time/counter display**
Indicates the time and real time counter. Also indicates the tuning position during station tuning.

⓬ **Safety lock indicator**
Lights when the VCR's play button has been locked.

1-10.FL DISPLAY (VS-425EOG)



❶ **Tape load indicator**
Lights when the video tape has been loaded.

❷ **VPS AUTO STOP indicator**
VPS lights when the VPS AUTO REC switch is ON and a VPS signal is received.
AUTO STOP lights during the VPS auto stop mode.
(This feature is optional and requires a VPS adapter available from your video dealer.)

❸ **VCR mode indicator**
Lights when the TV/VCR button is set to VCR.

❹ **SPUR (Digital Tracking) indicator**
Lights when digital auto tracking is operating.

❺ **Tape mode indicators**
Indicate what operation mode the video tape is in.

❻ **QUICK TIMER indicator**
Lights when the VCR is in the quick timer mode.

❼ **Timer indicator**
Lights when the VCR is in the timer recording mode.

❽ **Channel indicator**
Indicates the selected channel number. Also indicates the index number during index search, and programme number during intro scan.

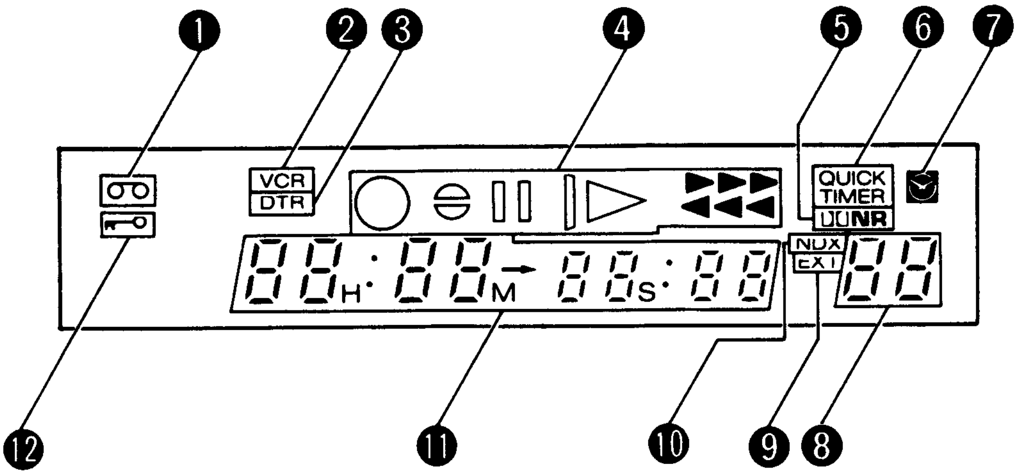
❾ **EXT (External) indicator**
Indicates that the VCR is set for external input.

❿ **INDX (Index) indicator**
Lights during index search, intro scan and when index codes are added to the tape during recording.

⓫ **Time/counter display**
Indicates the time and real time counter. Also indicates the tuning position during station tuning.

⓬ **Safety lock indicator**
Lights when the VCR's play button has been locked.

1-11. FL DISPLAY (VS-427EK, 467EK, 485EK)



① **Tape load indicator**
Lights when the video tape has been loaded.

② **VCR mode indicator**
Lights when the TV/VCR button is set to VCR.

③ **DTR (Digital Tracking) indicator**
Flashes when digital auto tracking is operating.

④ **Tape mode indicators**
Indicate what operation mode the video tape is in.

⑤ **Dolby NR indicator**
Lights when the Dolby NR button is set to on.

⑥ **QUICK TIMER indicator**
Lights when the VCR is in the quick timer mode.

⑦ **Timer indicator**
Lights when the VCR is in the timer recording mode.

⑧ **Channel indicator**
Indicates the selected channel number. Also indicates the index number during index search, and programme number during intro scan.

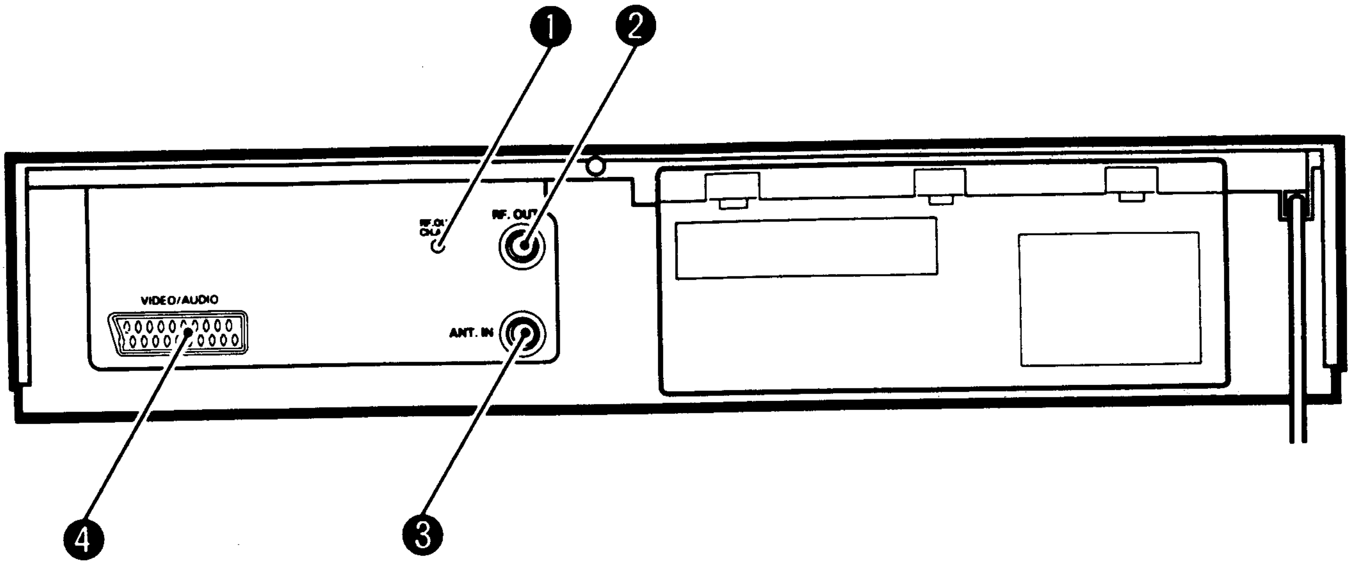
⑨ **EXT (External) indicator**
Indicates that the VCR is set for external input.

⑩ **INDX (Index) indicator**
Lights during index search, intro scan and when index codes are added to the tape during recording.

⑪ **Time/counter display**
Indicates the time, real time counter. Also indicates the tuning position during station tuning.

⑫ **Safety lock indicator**
Lights when the VCR's play button has been locked.

1-12. REAR PANEL (VS-422EOH, 425EOG, 425EOH)


1
2
RF. OUT
VIDEO/AUDIO
ANT. IN
4
3

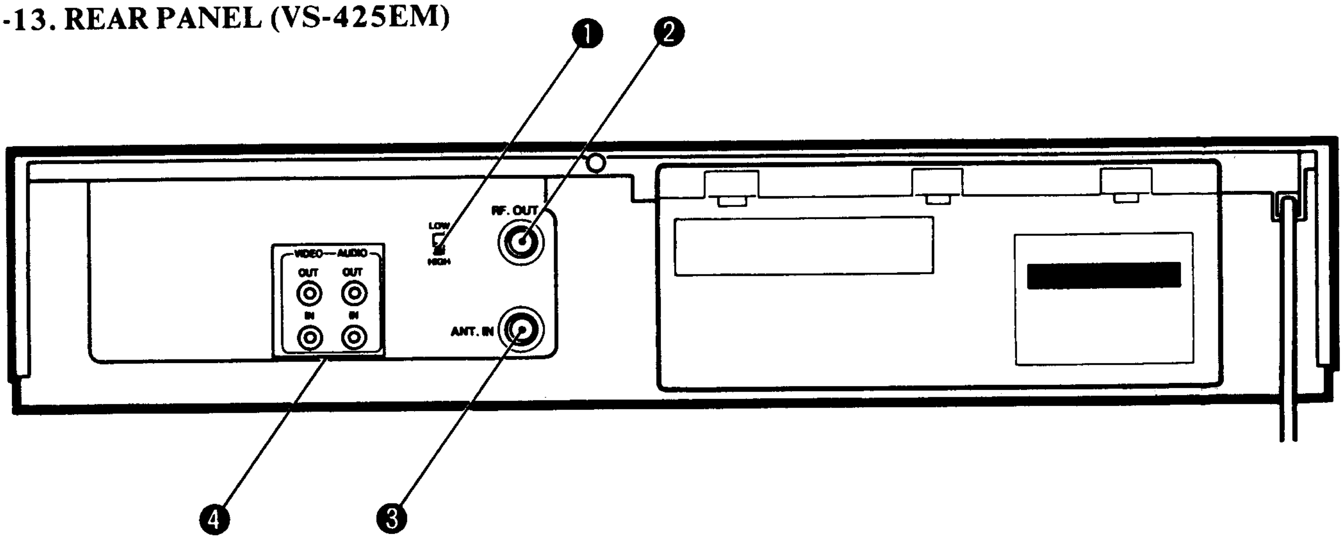
❶ **RF OUT CH. ADJ (Channel adjustment) screw**
To select the output channel of the VCR.

❷ **RF. OUT terminal**
To connect the VCR to the TV's ANTENNA IN terminal.

❸ **ANT. IN terminal**
For TV antenna connection.

❹ **VIDEO/AUDIO connector**
For connection of a TV or second VCR when using a video/audio connection cord.

1-13. REAR PANEL (VS-425EM)


1
2
LOW
HIGH
RF. OUT
VIDEO
AUDIO
OUT
OUT
IN
IN
ANT. IN
4
3

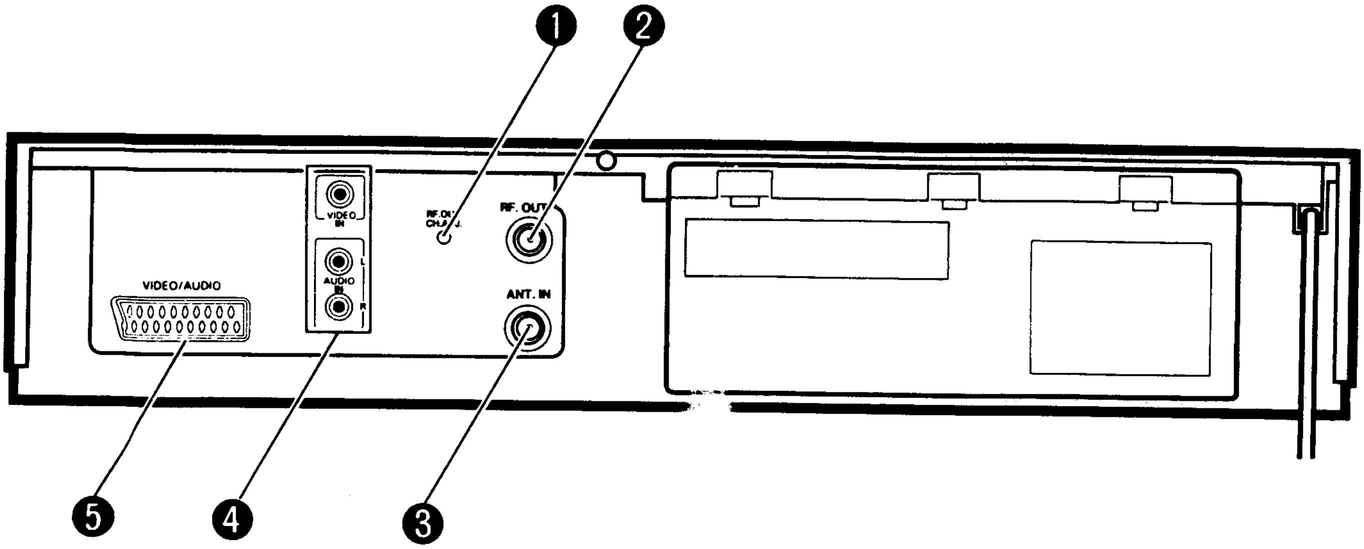
❶ **RF out switch**
To select the output channel of the VCR.

❷ **RF. OUT terminal**
To connect the VCR to the TV's ANTENNA IN terminal.

❸ **ANT. IN terminal**
For TV antenna connection.

❹ **VIDEO/AUDIO IN/OUT terminals**
For connection of a TV or second VCR.

1-14. REAR PANEL (VS-427EK, 467EK, 485EK)


①
②
VIDEO IN
AUDIO IN
L
R
RF.OUT CH.ADJ.
RF. OUT
ANT. IN
VIDEO/AUDIO
⑤
④
③

① **RF OUT CH. ADJ (Channel adjustment) screw**
To adjust the output channel of the VCR.

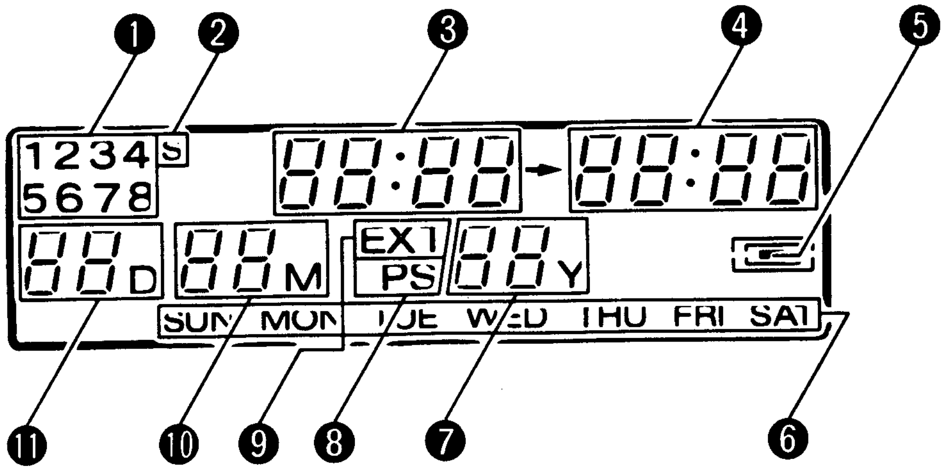
② **RF. OUT terminal**
To connect the VCR to the TV's ANTENNA IN terminal.

③ **ANT. IN terminal**
For TV antenna connection.

④ **External input (VIDEO IN, AUDIO IN) terminals**
For connector of an external source such as a TV or TV tuner.

⑤ **VIDEO/AUDIO connector**
For connection of a TV or second VCR when using a video/audio connection cord.

LC (Liquid Crystal) display



❶ **Programme number indicator**
Indicates the programme number.

❷ **S (Daylight saving time) indicator**
Indicates that the clock's time is set to the daylight saving time.

❸ **Clock, Start time indicator**
Indicates the present time or start time of a programme set for timer recording.

❹ **Stop time indicator**
Indicates the stop time of a programme set for timer recording.

❺ **Transmit indicator**
Lights when data in the remote control is transmitted to the VCR or ready to be transmitted.

❻ **Weekday indicator**
Indicates the weekday.

❼ **Year indicator**
Indicates the year.
Indicates the preset channel number.

❽ **PS (Preset) indicator**

❾ **EXT (External) indicator**
Indicates that the VCR is set to the external mode.

❿ **Month indicator**
Indicates the month.

⓫ **Date indicator**
Indicates the date.

1-17. REMOTE CONTROL UNIT

❶ **AUTO SCAN, STABILITY button**
To start automatic station scan when presetting TV stations. Also used to correct vertical picture shake.

❷ **CANCEL, PRESET, NORMAL button**
To set the VCR to the station presetting mode. Also used to set the cancel mode for preset stations.

❸ **CLOCK button**
To set the VCR to the clock setting mode.

❹ **PRGM (Programme) button**
To display the programme, clock screen on the TV screen.

❺ **POWER ON/STANDBY button**
To turn the VCR's power on or off (standby mode).

❻ **Tape transport buttons**

REC ●	Record button
◀◀	Rewind button
▶▶	Fast forward button
PAUSE /STILL ■■	PAUSE/STILL button
■	Stop button
▶	Play button
SLOW ▮▶	SLOW button
VARIABLE SPEED − +	VARIABLE SPEED buttons
INDEX SEARCH ▮◀◀ ▶▶▮	INDEX SEARCH reverse, forward buttons

❼ **NEXT button**
To display the next-mode patterns.

❽ **COUNTER RESET button**
To reset the tape counter.

❾ **Multi-function buttons**
Used for clock amd programme setting. Also used to select channels

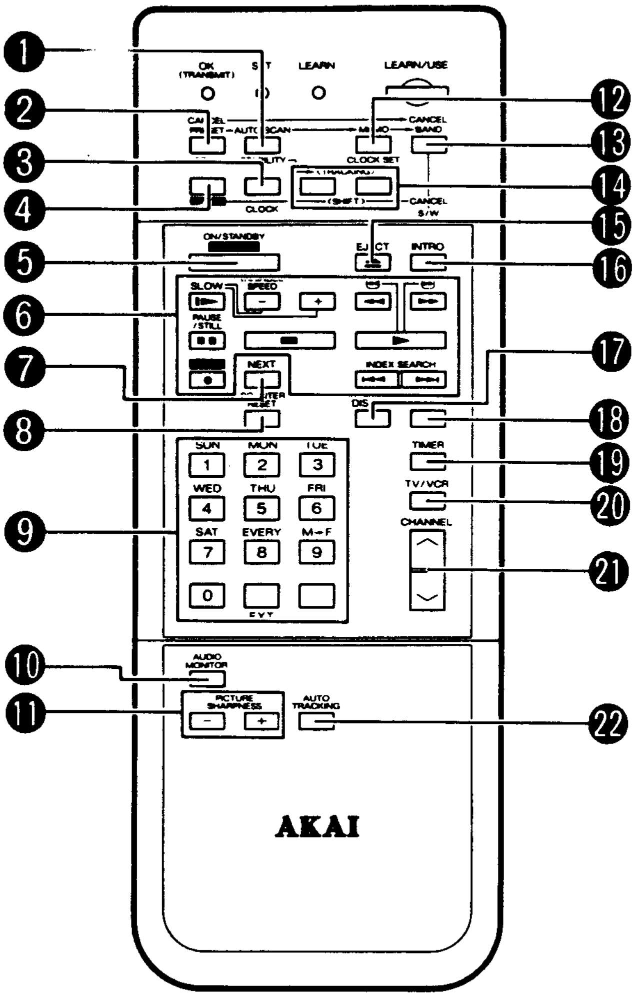
❿ **AUDIO MONITOR button**
To set the VCR for stereo, left channel or right channel audio output.

⓫ **PICTURE SHARPNESS buttons**
To sharpen or soften the playback picture.

⓬ **MEMO, CLOCK SET button**
To memorize clock data during clock setting. Also used to memorize stations during station presetting.

⓭ **CANCEL, BAND button**
To cancel preset timer programmes or TV stations.

⓮ **TRACKING, SHIFT buttons**
To correct preset data during clock or programme setting. Also used to adjust tracking manually during playback.



1
2
3
4
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21
22
OK (TRANSMIT)
ST
LEARN
LEARN/USE
CANCEL
PRESET
AUTO SCAN
MEMO
CLOCK SET
CANCEL
BAND
STABILITY
CLOCK
TRACKING
SHIFT
CANCEL S/W
ON/STANDBY
EJECT
INTRO
SLOW
SPEED
PAUSE /STILL
NEXT
INDEX SEARCH
COUNTER RESET
DISP
TIMER
TV/VCR
CHANNEL
SUN
MON
TUE
WED
THU
FRI
SAT
EVERY
M-F
1
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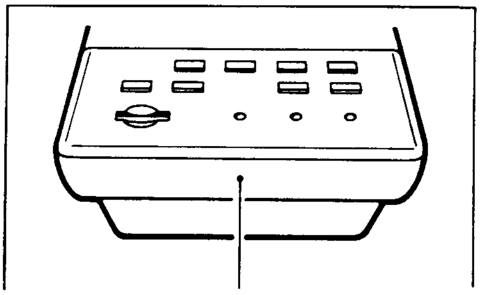
EVT
AUDIO MONITOR
PICTURE SHARPNESS
AUTO TRACKING
AKAI



⓯ **EJECT button**
To eject the video tape from the VCR.

⓰ **INTRO button**
To set the VCR to the intro scan mode.

⓱ **DISPLAY button**
To display the clock and tape counter on the TV screen

⓲ **AUTO/OFF button**
To turn the language list screen on or off.

⓳ **TIMER button**
To set or reset the timer recording mode.

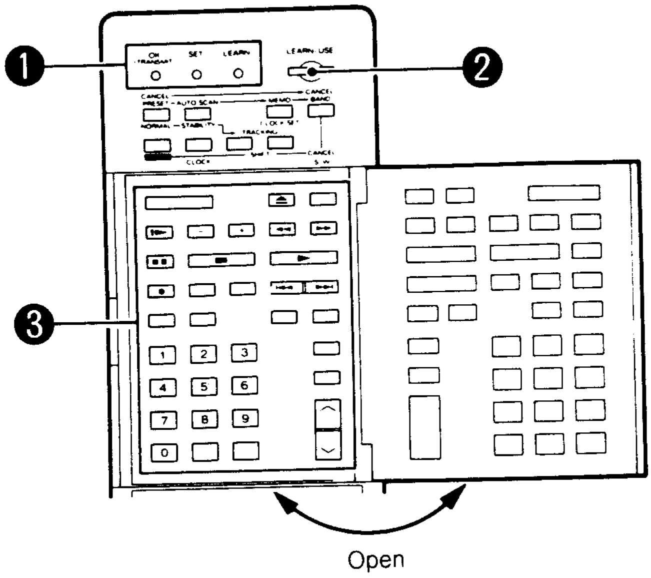
⓴ **TV/VCR button**
To watch a programme on a different TV channel than the one you are recording.

㉑ **CHANNEL button**
To select channels.

㉒ **AUTO TRACKING button**
To correct tracking automatically.

The universal buttons

Opening the remote control cover switches 36 of the regular control buttons to universal buttons that are capable of learning and reproducing up to 36 different function control signals from other remote control units.



❶ Universal function indicators
Light when the remote control's universal function is being used. The OK (TRANSMIT) indicator also lights when the regular remote control buttons are used.

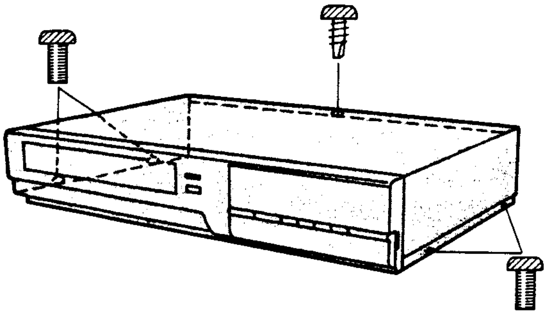
❷ LEARN/USE button
Used to set the remote control to the learn and use modes.

❸ Universal buttons
Used for control of other components after function control signals of other remote controls have been "learned" at these buttons.

II. DISASSEMBLY

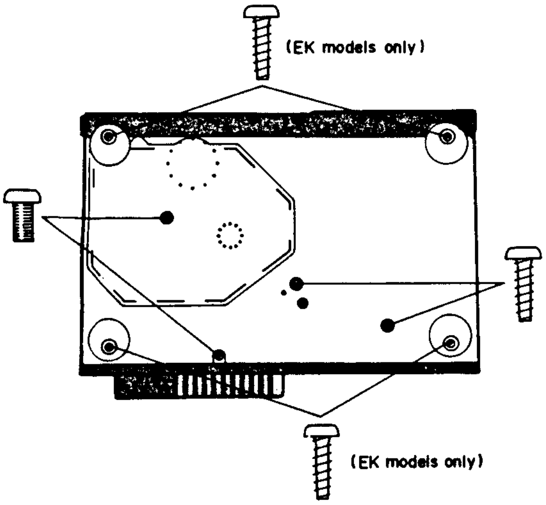
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in reverse order.
When re-attaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

1.Removal of UPPER COVER

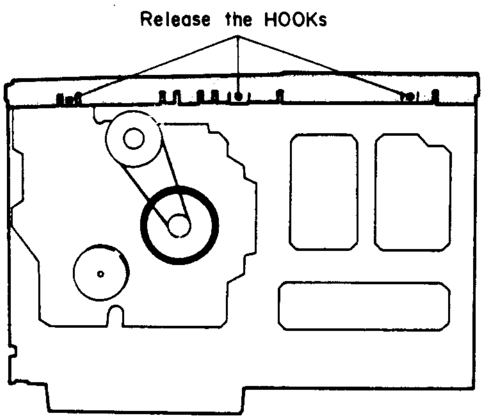


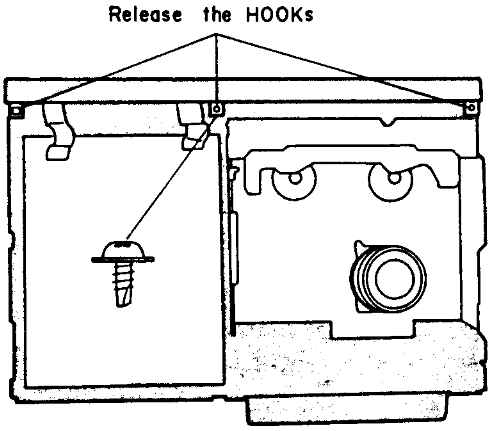
※ Illustration employed on this paragraph is of model VS-425EOH.

2.Removal of BOTTOM COVER

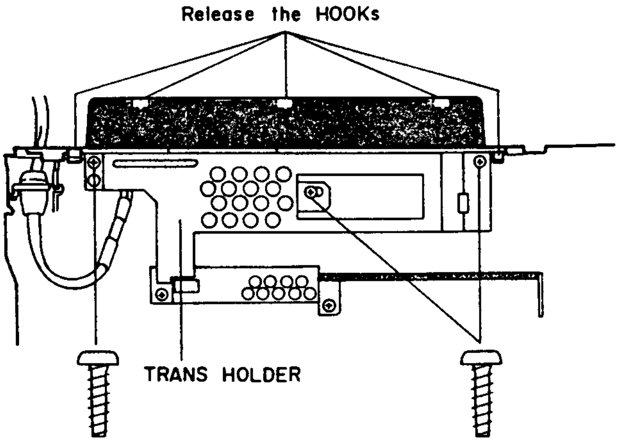

(EK models only)
(EK models only)

3.Removal of FRONT PANEL


Release the HOOKs


Release the HOOKs

4.Removal of TRANS COVER


Release the HOOKs
TRANS HOLDER

III. PRINCIPAL PARTS LOCATION

※ Photograph employed on this page is of model VS-485EK.

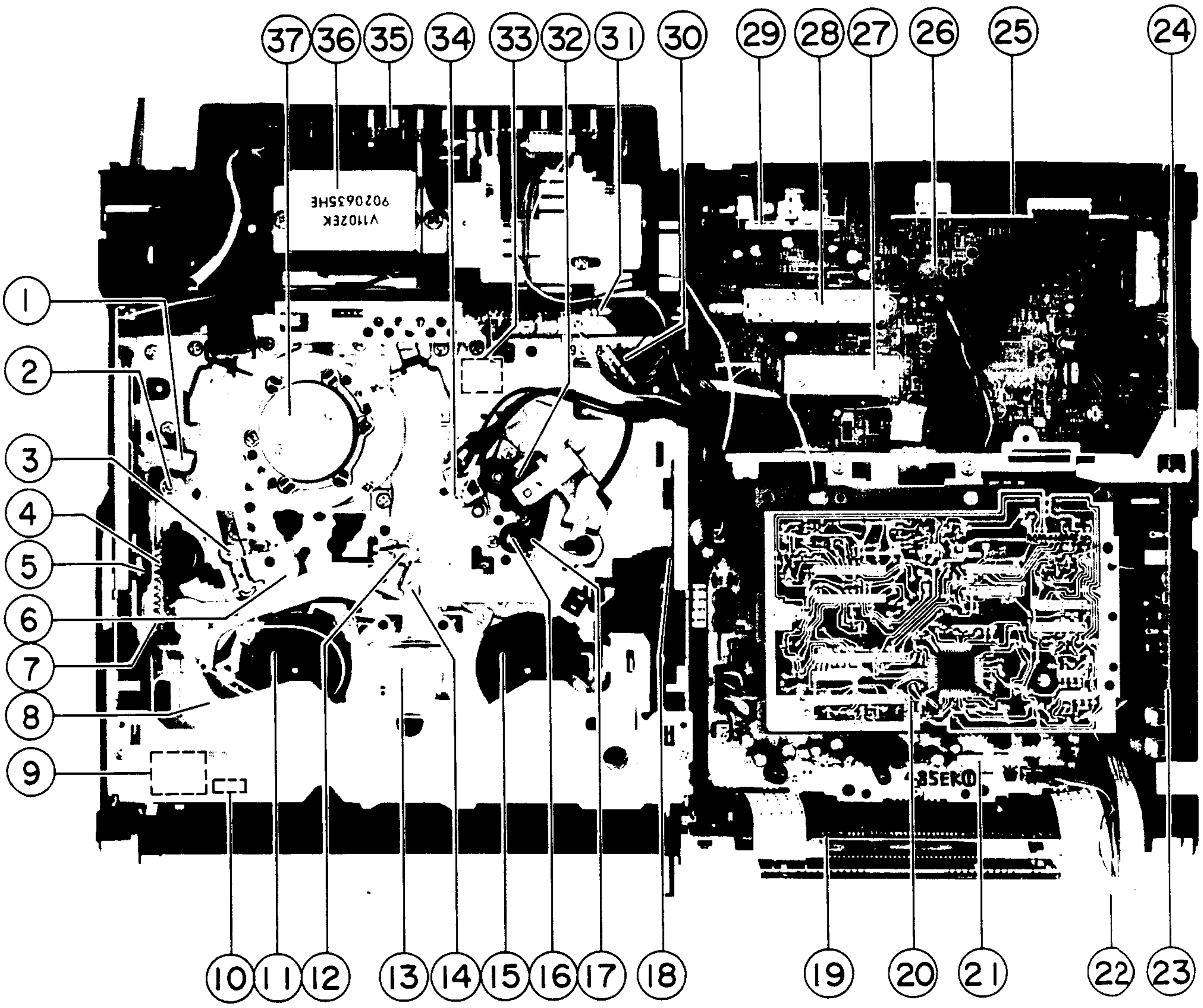


Fig.3-1 Top view

1. FULL TRACK ERASE HEAD
2. SUPPLY TAPE GUIDE
3. SUPPLY LOADING LEADER
4. FRONT LOADING GEAR
5. SENSOR(S) PCB (END SENSOR)
6. TENSION ARM
7. FRONT LOADING SLIDER
8. CASSETTE LOAD BLK
9. LOADING MOTOR
10. REC SAFETY SWITCH
11. SUPPLY REEL TABLE
12. TAKE UP LOADING LEADER
13. IDLER PART
14. SENSOR LED
15. TAKE UP REEL TABLE
16. CAPSTAN MOTOR
17. REVIEW ARM
18. SENSOR(T) (START SENSOR)
19. OPERATION(A) PCB (VS-422EOH, 427EK, 467EK, 485EK)
    OPERATION(B) PCB (VS-425EM, 425EOG, 425EOH)
20. NICAM PCB (VS-485EK only)
21. LINEAR STEREO(A) PCB
22. LINEAR STEREO(B) PCB
23. VIDEO PCB
24. PC ANGLE
25. REAR PIN JACK PCB
26. MAIN PCB
27. VIF UNIT
28. TUNER UNIT
29. RF CONVERTOR UNIT
30. JUNCTION PCB
31. PRE AMP PCB
32. PINCH ROLLER
33. DIODE PCB
34. AUDIO/CONTROL/S.ERASE HEAD
35. POWER PCB
36. POWER TRANSFORMER
37. VIDEO HEAD DRUM BLOCK

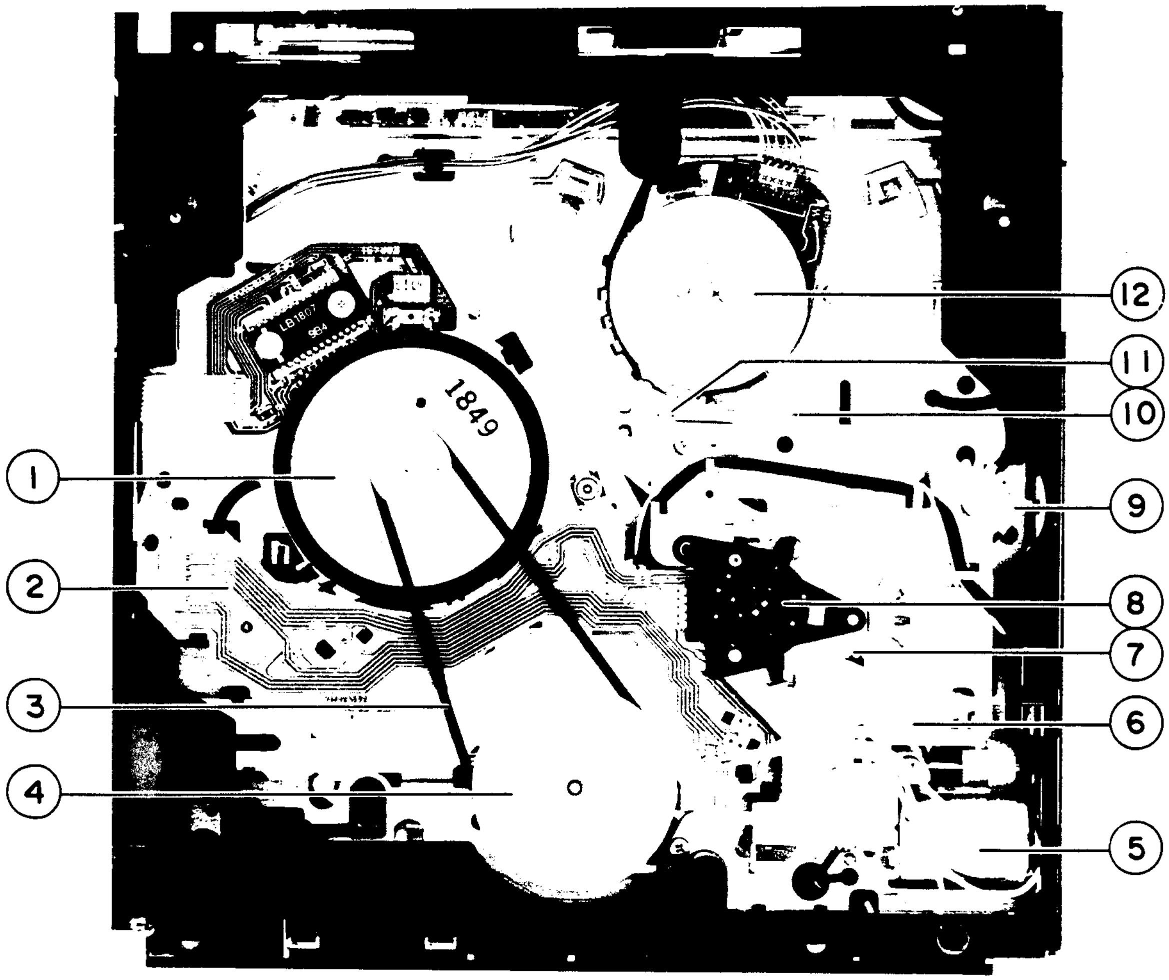


Fig.3-2 Bottom view

1. CAPSTAN MOTOR BLOCK	7. CAM SLIDER GEAR
2. SENSOR PCB	8. MODE SELECT SWITCH
3. CAPSTAN BELT	9. FRONT LOADING GEAR
4. CLUTCH DISK PART	10. TOGGLE (S) GEAR BLOCK
5. LOADING MOTOR	11. TOGGLE (T) GEAR BLOCK
6. LOADING DRIVE BLOCK	12. DRUM MOTOR BLOCK

IV. MAIN COMPONENTS REPLACEMENT

4-1. REMOVAL OF THE EJECTOR BLOCK

*Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

4-1-1. Removal of the CASSETTE LOAD BLK

1) Remove the two Ⓐ screws on the UPPER PLATE as shown in Fig.4-1 then remove the UPPER PLATE.
2) Lift up the FRONT GUIDE while pushing the CASSETTE LOAD BLK backward, then remove the FRONT GUIDE.
3) Lift up the front side of the CASSETTE LOAD BLK gently then remove it. To avoid damaging the pins of the CASSETTE LOAD BLK and the groove of the MECHA.FRAME, do not add excessive force to the CASSETTE LOAD BLK when removing it.

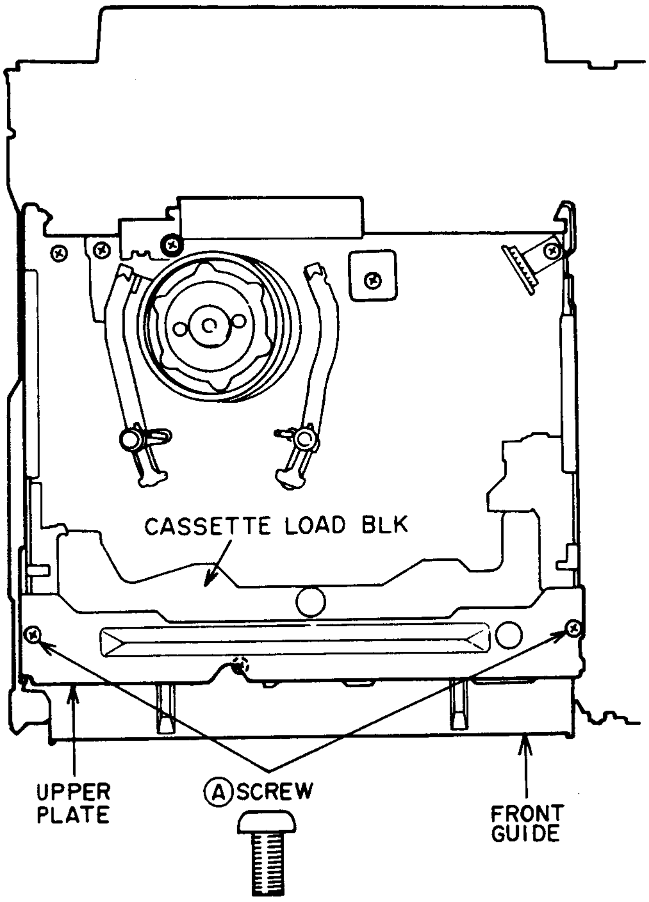


Fig. 4-1

4-1-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (Refer Fig.4-2) by pressing the stopper tab with a flat head (—) screwdriver. Then remove the shaft's right end from the bracket.

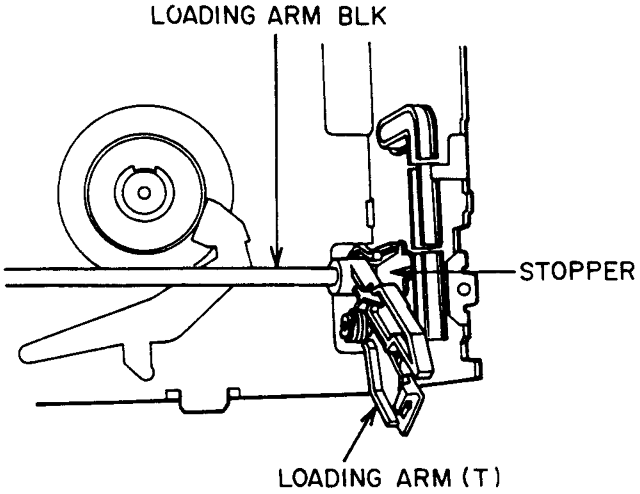


Fig. 4-2

2) Hold the LOADING ARM (T) and turn it 30 degrees clockwise, then pull out the shaft's left end from the bracket. To avoid damaging the JOINT GEAR and EJECT GEAR, take special care when removing. (Refer Fig.4-3)

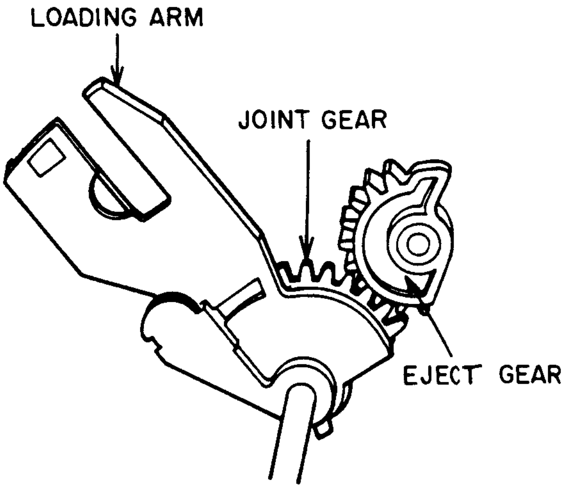


Fig. 4-3

4-2. REMOVAL OF THE SENSOR PC BOARD

*Before proceeding with removal of the SENSOR PCB the loading mechanism must be set to the "unloaded" position (the position where the CAM SLIDER GEAR's groove mark is visible through the hole of the MODE SELECT SW.) as shown in Fig.4-4.

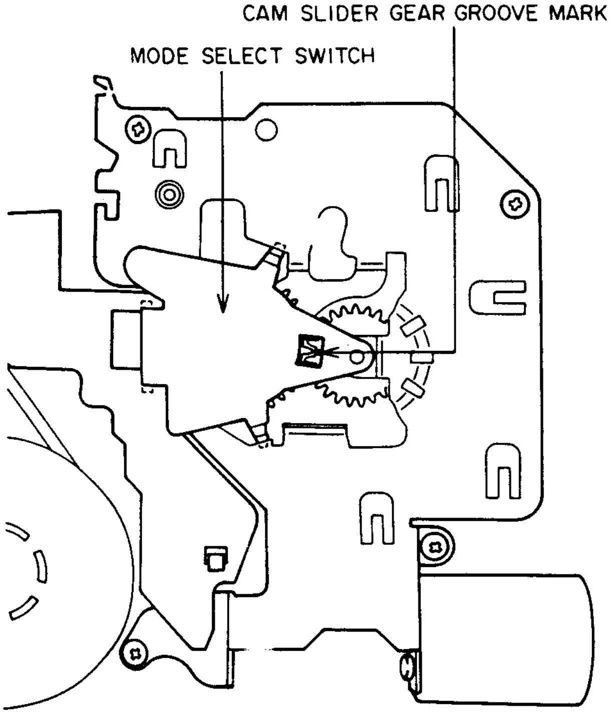


Fig. 4-4

To set the loading mechanism to the "unloaded" position, proceed with one of the following (1) or (2) procedures.

(1) Insert a video cassette tape which you no longer need. Once the tape has been loaded or entered "play" mode, press the POWER button to turn the power off. Disconnect the AC power plug from the AC socket after the cassette tape has been unloaded.

(2) Remove the UPPER PLATE, FRONT GUIDE and CASSETTE LOAD BLK. (Refer to 4-1-1. Removal of the CASSETTE LOAD BLK.)
Plug in the AC power cord. The LOADING ARM BLK will move backward (the cassette load BLK will be in the down position) and forward (the cassette load BLK will be in the eject position) continuously.
With your fingers, cover and hold both SENSOR (S) and SENSOR (T) at the same time when the LOADING ARM BLK is in the backward position. The unit will enter the "play" mode without the cassette tape. While covering both sensors, press the "POWER" button. The unit will now enter the "tape unloaded" position. Release your fingers from the sensors, and disconnect the AC power plug from the AC power socket.

4-2-1. Removal of the MODE SELECT SWITCH

1) Release the two Ⓐ stoppers as shown in Fig.4-5.

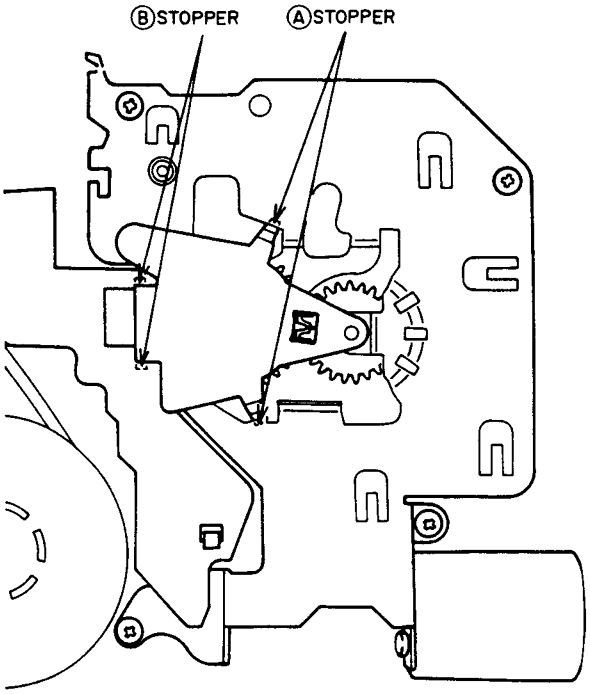


Fig. 4-5

2) Release the two Ⓑ stoppers carefully while pulling up the MODE SELECT SWITCH. Then remove the MODE SELECT SWITCH. (Do not damage the pins of the MODE SELECT SWITCH or the connector P1 on the SENSOR PCB)

4-2-2. Removal of the SENSOR PC Board

1) Disconnect the connector P409 on the MAIN PCB.
2) Remove the capstan belt.
3) Release the Ⓐ, Ⓑ, and Ⓒ stoppers as shown in Fig.4-6. Then remove the SENSOR PCB.

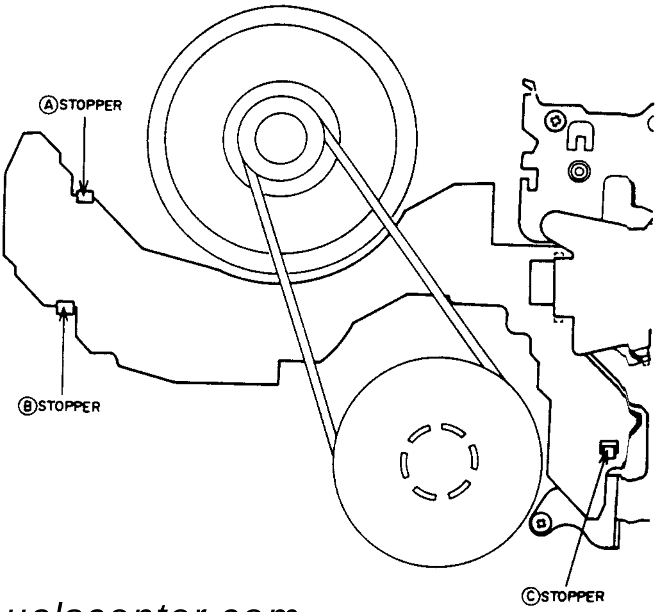


Fig. 4-6

4-3. REMOVAL OF THE LOADING DRIVE BLK

Set the loading mechanism at the "unloaded" position as well as 4-2 (REMOVAL OF THE SENSOR PC BOARD). However this time, to avoid damaging the tape and mechanical parts, refer to 4-2, *(2) only.

1) Remove the MODE SELECT SWITCH in the same manner as 4-2-1 (Removal of the MODE SELECT SWITCH).
2) Unhook the five wires from each tab. Two wires from the SENSOR(S), two wires from the LOADING MOTOR and one wire from the REC SAFETY SWITCH.
3) Remove the Ⓐ, Ⓑ, Ⓒ, and Ⓓ screws, then remove the LOADING DRIVE BLK as shown in Fig.4-7.

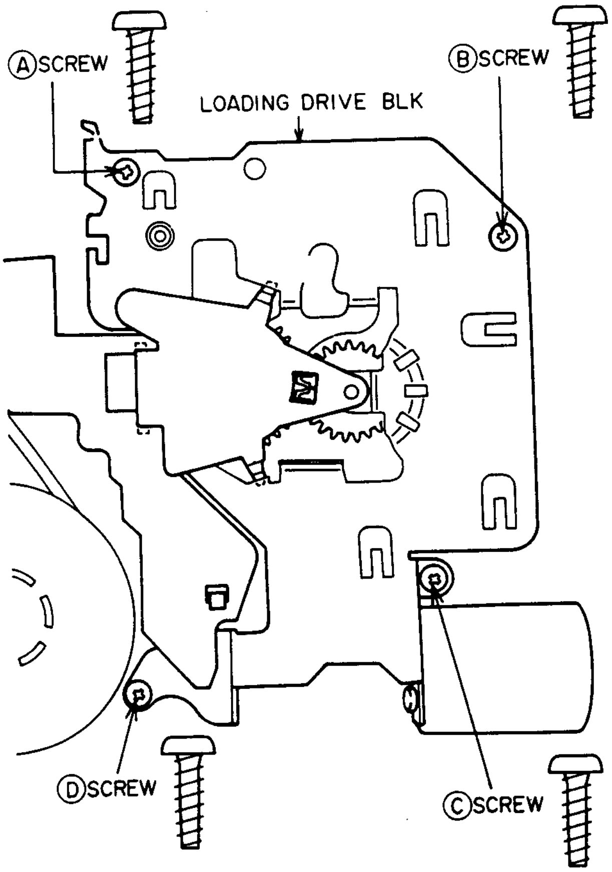

ⒶSCREW
ⒷSCREW
LOADING DRIVE BLK
ⒹSCREW
ⒸSCREW

Fig. 4-7

4-4. REPLACEMENT OF THE PINCH HOLDER PART

1) Release the stopper of the PINCH ARM and remove the PINCH ARM BLK as shown in Fig 4-8.

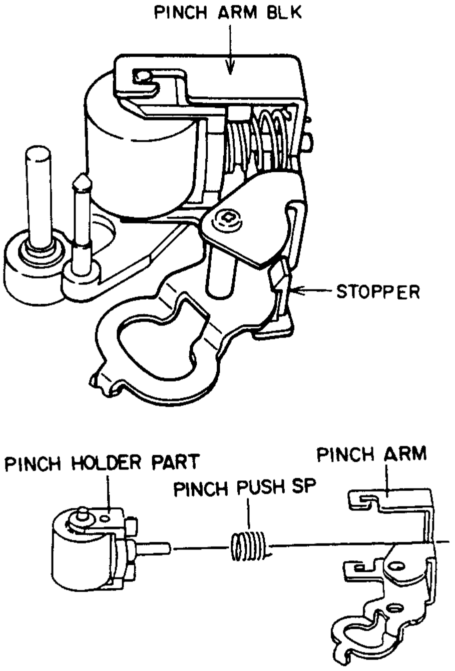

PINCH ARM BLK
STOPPER
PINCH HOLDER PART
PINCH ARM
PINCH PUSH SP

Fig. 4-8

2) Turn the PINCH HOLDER PART 30 degrees clockwise while pushing it backward and remove the PINCH HOLDER PART from the PINCH ARM.
3) Reassemble the PINCH ROLLER ARM BLK in the reverse order of 1) to 2).

4-5. REPLACEMENT OF THE IDLER PART AND REVIEW BRAKE PART

1) Remove the CASSETTE LOAD BLK & ARM LOADING BLK. (Refer to 4-1, REMOVAL OF THE EJECTOR BLK.)
2) Release the stopper of the IDLER PART as shown in Fig.4-9, then remove it.

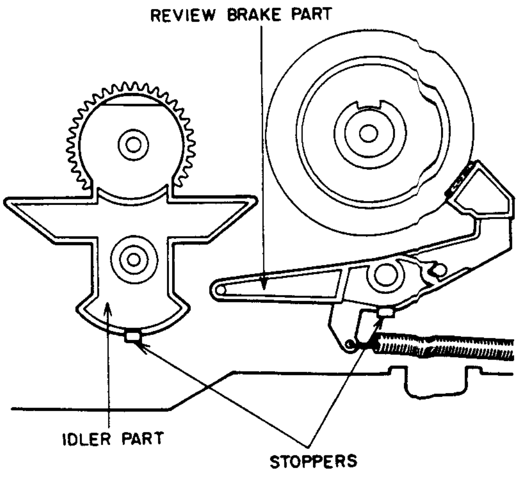

REVIEW BRAKE PART
IDLER PART
STOPPERS

Fig. 4-9

3) Take off the review brake part spring, then release the stopper of the REVIEW BRAKE PART and remove it.
4) Reassemble these parts in the reverse order of 1) to 3).

4-6. REASSEMBLY OF THE LOADING MECHANISM BLK

4-6-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEAR (T) and TOGGLE GEAR (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig.4-10.

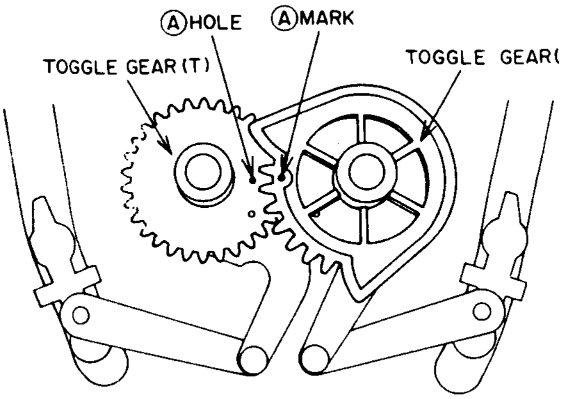

ⒶHOLE
ⒶMARK
TOGGLE GEAR (T)
TOGGLE GEAR(S)

Fig. 4-10

4-6-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig.4-11.

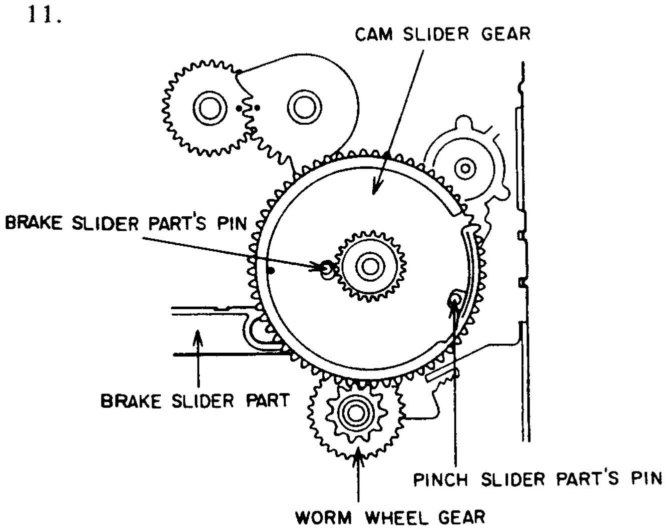

CAM SLIDER GEAR
BRAKE SLIDER PART'S PIN
BRAKE SLIDER PART
PINCH SLIDER PART'S PIN
WORM WHEEL GEAR

Fig 4-11

2) Set the CAM SLIDER GEAR. At this time, adjust the position of the BRAKE SLIDER PART and PINCH SLIDER PART so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig.4-11.

3) Attach the FRONT LOADING GEAR as shown in Fig.4-12. At this time, align the Ⓑ mark on the FRONT LOADING GEAR with the Ⓑ hole of the FRONT LOADING SLIDER as shown in Fig.4-13.

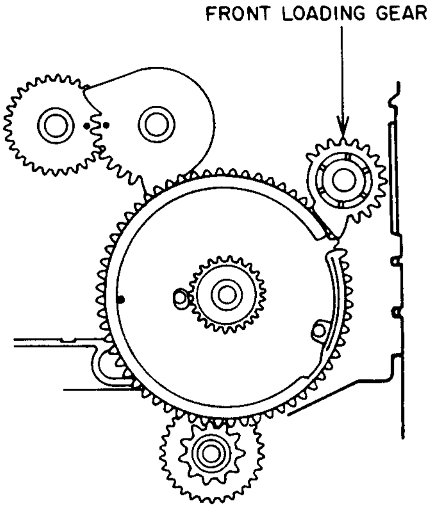

FRONT LOADING GEAR

Fig. 4-12

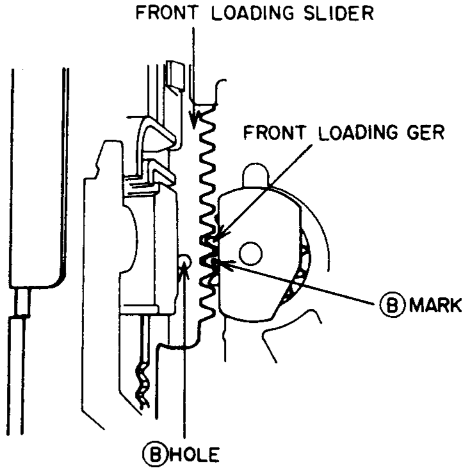

FRONT LOADING SLIDER
FRONT LOADING GER
ⒷMARK
ⒷHOLE

Fig. 4-13

4-6-3. Confirmation of the position of the EJECT GEAR

1) Confirm that the EJECT GEAR is in the correct position as shown in Fig.4-14.

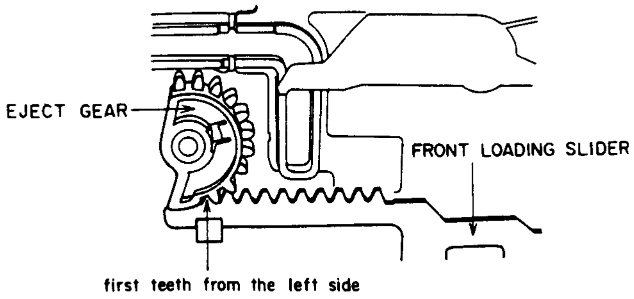

EJECT GEAR
FRONT LOADING SLIDER
first teeth from the left side

Fig. 4-14

2) Install the LOADING DRIVE BLK as shown in Fig.4-15.

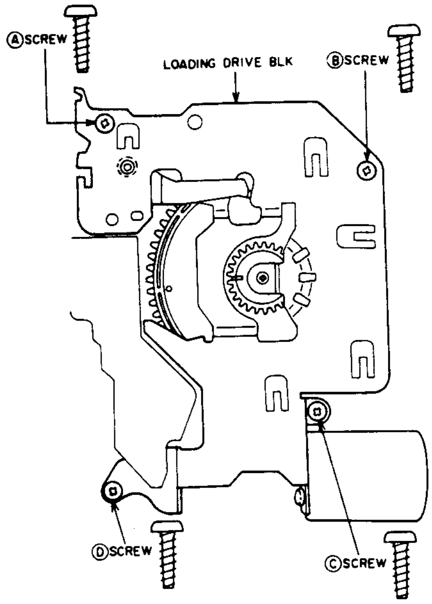

ⓐSCREW
LOADING DRIVE BLK
ⓑSCREW
ⓓSCREW
ⓒSCREW

Fig. 4-15

4-6-4. Installation of the MODE SELECT SWITCH

1) Set the MODE SELECT SWITCH's gear so that the Ⓒ mark is in the center of the Ⓒ hole as shown in Fig.4-16.

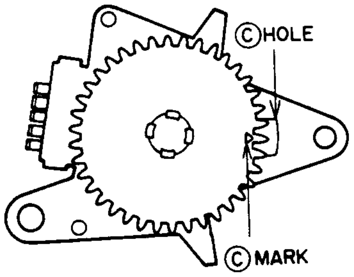


Fig. 4-16

2) Attach the MODE SELECT SWITCH to the LOADING DRIVE BLK. At this time, align the hollow of the gear's tooth (reverse side of the Ⓒ mark) with the Ⓒ groove of the CAM SLIDER GEAR as shown in Fig.4-17.

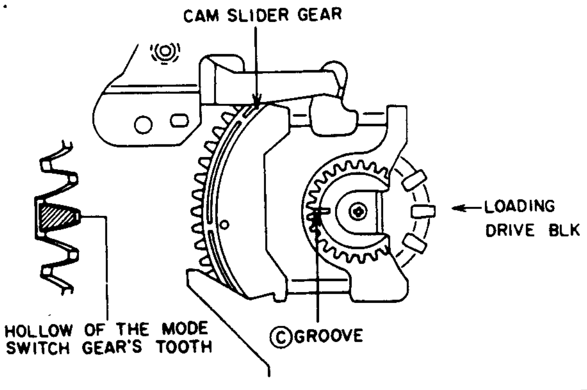

CAM SLIDER GEAR
LOADING DRIVE BLK
HOLLOW OF THE MODE SWITCH GEAR'S TOOTH
ⒸGROOVE

Fig. 4-17

4-6-5. Installation of the LOADING ARM BLK

1) While covering the SENSOR (S) with your fingers, connect the AC power plug to the AC socket. The FRONT LOADING SLIDER will reach the "EJECT" position. Then disconnect the AC power plug from the AC socket before you release your fingers from the SENSOR (S).
2) Install the LOADING ARM BLK in the reverse order of 4-1-2 (Removal of the LOADING ARM BLK). Set the position between both the EJECT GEAR and the JOINT GEAR as shown in Fig.4-18.

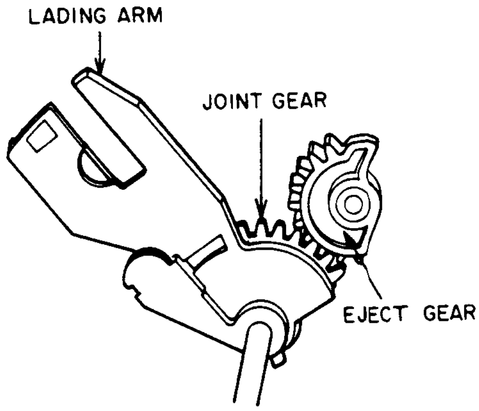

LADING ARM
JOINT GEAR
EJECT GEAR

Fig. 4-18

4-6-6. Installation of the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE

1) Attach the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE in the reverse order of 4-1-1 (Removal of the CASSETTE LOAD BLK).
2) Insert a video cassette tape and confirm that the loading mechanism will operate properly.

4-7. REPLACEMENT OF THE UPPER DRUM

4-7-1. Removal of the UPPER DRUM

1) Unsolder the four or six (VS-467EK only) relay leads and remove the two upper drum fixing screws as shown in Fig.4-19.
2) Gently lift and remove the UPPER DRUM.

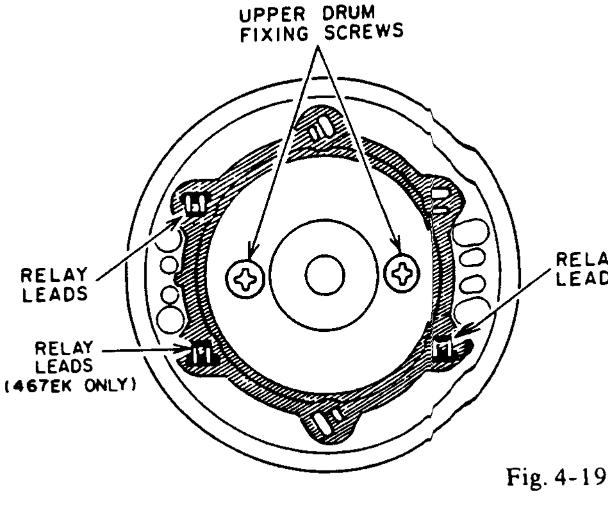
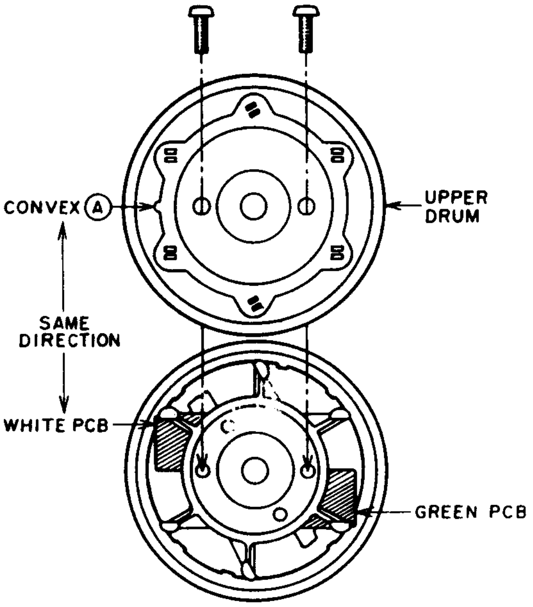

UPPER DRUM FIXING SCREWS
RELAY LEADS
RELAY LEADS
RELAY LEADS (467EK ONLY)

Fig. 4-19

4-7-2. Installation of the UPPER DRUM

1) Except VS-467EK model

Attach the UPPER DRUM to the LOWER DRUM ROTOR so that the upper drum convex Ⓐ and lower drum rotor's white PCB side are in the same direction as shown in Fig. 4-20.

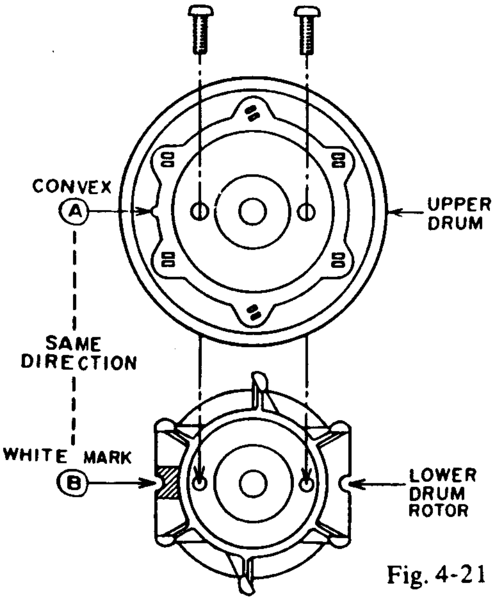


CONVEX Ⓐ
UPPER DRUM
SAME DIRECTION
WHITE PCB
GREEN PCB

Fig. 4-20

2) VS-467EK model

Attach the UPPER DRUM to the LOWER DRUM ROTOR so that upper drum convex Ⓐ and lower drum rotor's white mark are in the same direction as shown in Fig. 4-21.



CONVEX Ⓐ
UPPER DRUM
SAME DIRECTION
WHITE MARK Ⓑ
LOWER DRUM ROTOR

Fig. 4-21

NOTE: Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar preload.

(b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.

(c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.

(d) Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.

(e) Tighten the two upper drum fixing screws alternately and gradually.

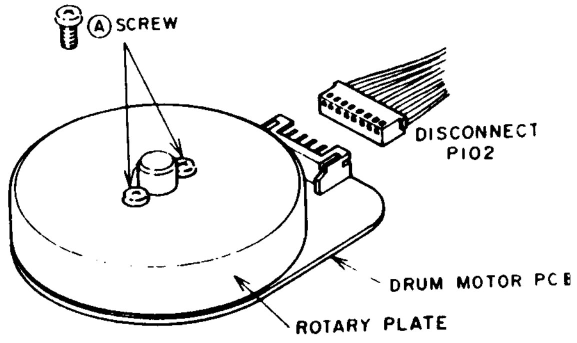
4-7-3. After replacement

After replacement, the following adjustments are necessary for proper performance.

1) Control head phase adjustment. (Tape transport adj. 5-3-3)
2) PB switching point adjustment. (Electrical adj.6-1-1)
3) Video head REC current adjustment. (Electrical adj.6-1-7)

4-8. DRUM MOTOR PC BOARD REPLACEMENT

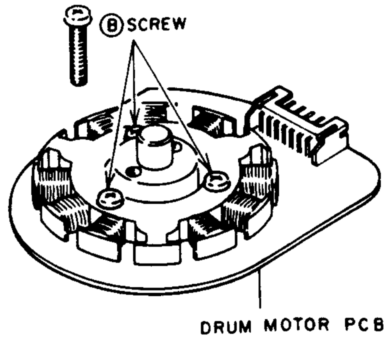
1) Remove the two Ⓐ screws then remove the ROTARY PLATE.



Ⓐ SCREW
DISCONNECT P102
DRUM MOTOR PCB
ROTARY PLATE

Fig. 4-22

2) Remove the three Ⓑ screws and disconnect the connector P102 from the DRUM MOTOR PCB. Then replace the DRUM MOTOR PCB.



Ⓑ SCREW
DRUM MOTOR PCB

Fig. 4-23

3) Attatch the ROTARY PLATE to the collar preload so that the rotary plate ⓐ hole and collar preload ⓑ hole are in the same direction.

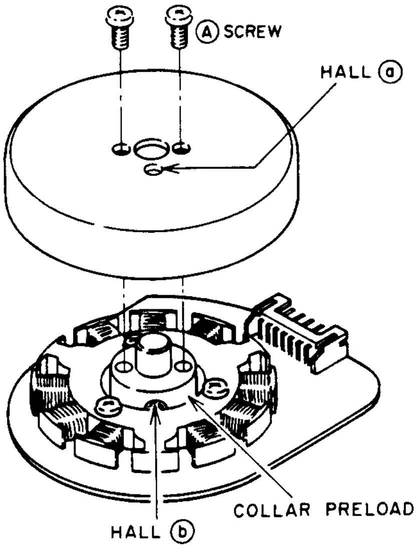

Ⓐ SCREW
HALL ⓐ
COLLAR PRELOAD
HALL ⓑ

Fig. 4-24

4-9. REMOVAL OF THE MECHANISM BLOC

4-9-1. Removal of the PRE AMP PC Board

1) Remove the two Ⓐ screws then pull up the PRE AMP PCB as shown in Fig. 4-25

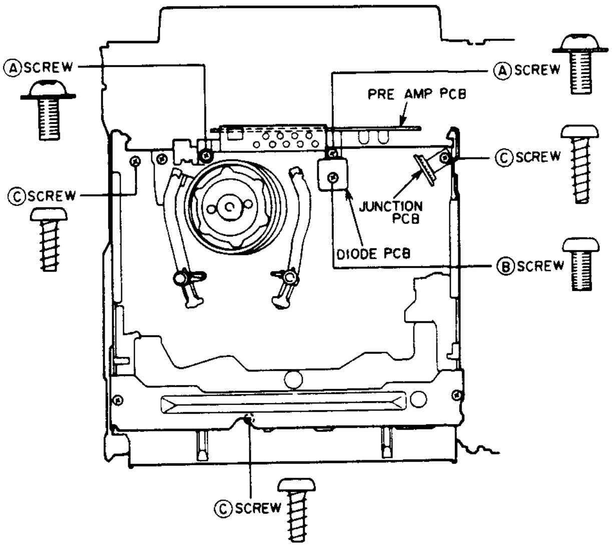

ⒶSCREW
ⒶSCREW
PRE AMP PCB
ⒸSCREW
ⒸSCREW
JUNCTION PCB
DIODE PCB
ⒷSCREW
ⒸSCREW

Fig. 4-25.

4-9-2. Removal of the MECHANISM BLK (MECHA.FRAME)

1) Disconnect the connectors P302, P401, P408, P409 on the MAIN PCB and P1, P2 on the A/C HEAD(2) PCB.
2) Remove the Ⓑ screw on the DIODE PCB and remove the DIODE PCB. (Except VS-425EM and 485EK models)
3) Remove the three Ⓒ screws from the MECHA. FRAME as shown in Fig. 4-25.
4) Hold the rear side of the MECHA. FRAME then remove by pulling up backward.
5) Reassemble in the reverse order for installation.

V. MECHANICAL ADJUSTMENT

5-1. BACK TENSION ADJUSTMENT

1) Set the color bar test tape TF-532CBS (AT-751360) in the VCR and play it back.
2) Observe the TV screen and adjust the V-HOLD for TV so that the switching point appears on the TV screen in Fig. 5-1.

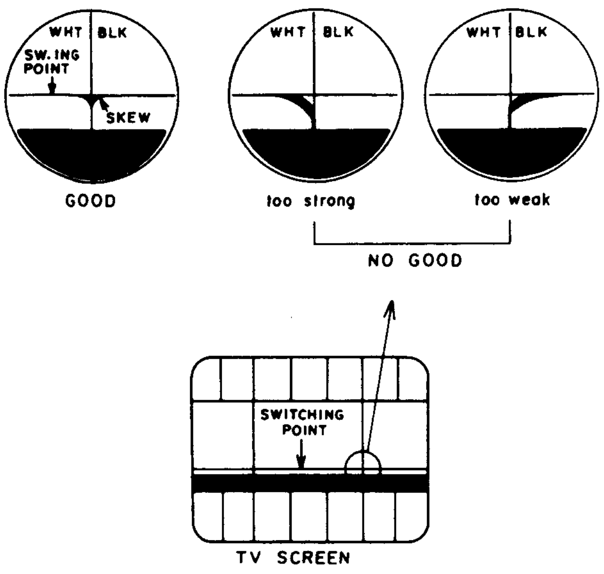

WHT
BLK
SW.ING POINT
SKEW
GOOD
too strong
too weak
NO GOOD
SWITCHING POINT
TV SCREEN

Fig. 5-1

3) Check the skew near the switching point on the TV screen and if the back tension is too much or too weak, eject the tape and select the hook position of the TENSION SPRING where the smallest skew should be obtained.

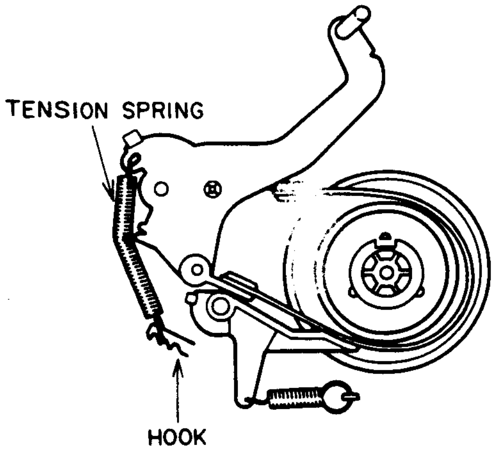

TENSION SPRING
HOOK

Fig. 5-2

5-2. TAPE TRANSPORT ADJUSTMENTS

NOTE: The following adjustments are required only when an irregularity is found since these adjustment are performed precisely at the factory.

5-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer need.
2) Turn the ⓐ screw on the A/C HEAD BLK until the edge of the tape barely touches the lower part of TAKE UP TAPE GUIDE without any curl or wrinkle.
3) Once the ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 5-3. A/C HEAD POSITION ADJUSTMENT)

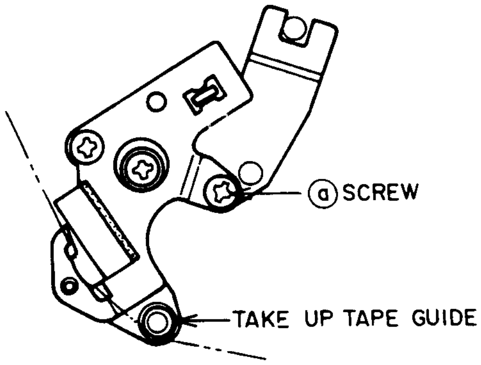

ⓐSCREW
TAKE UP TAPE GUIDE

Fig. 5-3

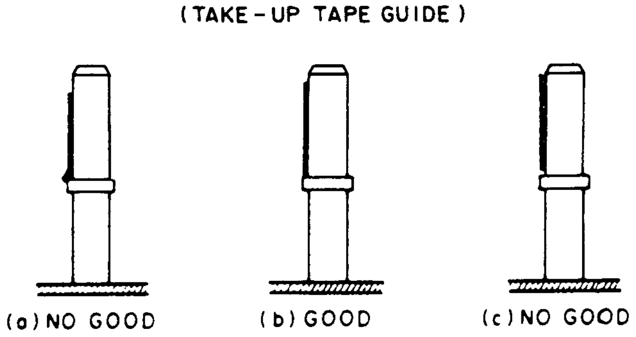

(TAKE-UP TAPE GUIDE)
(a) NO GOOD
(b) GOOD
(c) NO GOOD

Fig. 5-4

5-2-2. Confirmation of tape curl at the SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE without any curl or wrinkle as shown in Fig.5-5.

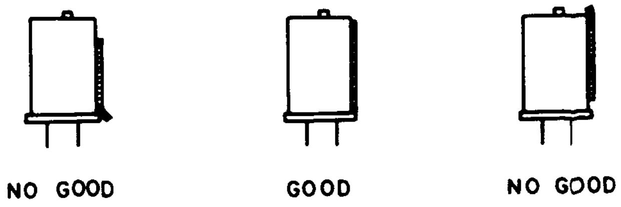
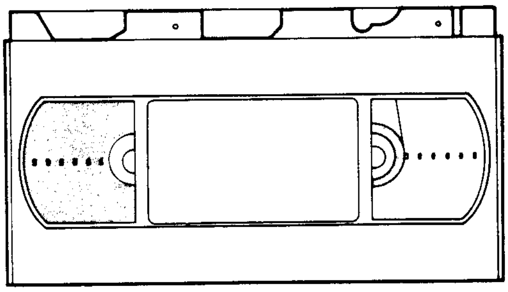

NO GOOD
GOOD
NO GOOD

Fig. 5-5

5-2-3. REVIEW ARM height adjustment

1) Play back the beginning part of an E-240 (T-160) tape and set the unit in the REVIEW mode by pressing the REW button.
(Remove the tape protection cover to make the adjustment easy.)



2) Turn the REVIEW ARM height nut ⓐ so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig.5-6 to Fig.5-8.

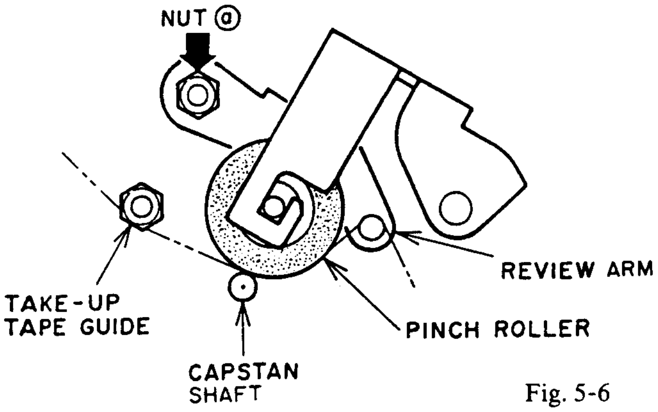
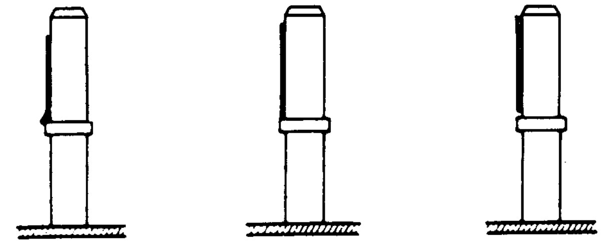


Fig. 5-6

(TAKE-UP TAPE GUIDE)



(a) NO GOOD (b) GOOD (c) NO GOOD

Fig. 5-7

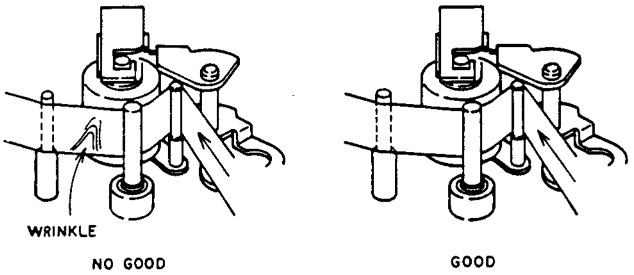


Fig. 5-8

3) Play back the beginning part of an E-240 (T-160) tape and this time set the unit in the CUE mode by pressing the F.FWD button.

4) Confirm that there is no curl or wrinkle at REVIEW ARM's guide.
If a curl or wrinkle of the tape has occurred, slightly turn the ⓐ nut (shown in Fig.5-6) until it disappears.

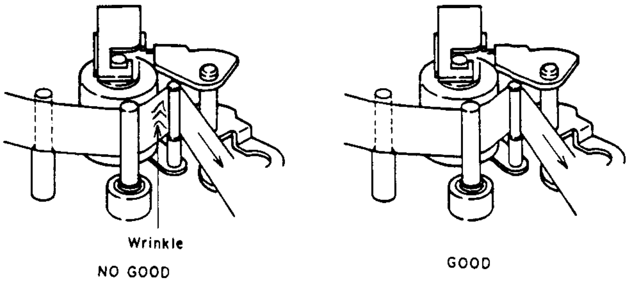
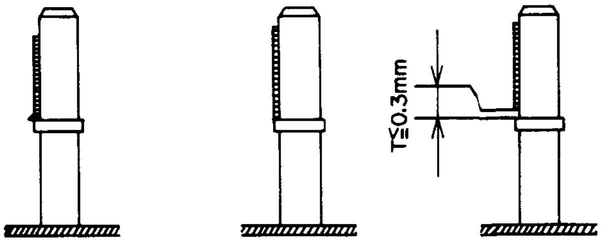


Fig. 5-9

5) Set the unit in REVIEW mode again. Then confirm that there is no curl or wrinkle at the TAKE-UP TAPE GUIDE.
(A small gap may appear after this adjustment, but it is allowable.)



(a) NO GOOD (b) GOOD (c) GOOD

Fig. 5-10

Note
1. If the result is not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Since E-240 (T-160) tape can easily be damaged because of its thinness, a pre-adjustment with E-180 (T-120) tape is recommended.

5-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer Fig.5-11)
2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope to TP606 (ENVE) on the VIDEO PCB.
4) Turn the LOADING LEADER heads with a flat head (—) screw driver to obtain flat RF envelope as ideal envelope as shown in Fig.5-12.
5) After the adjustment is completed, tighten the loading leader set screws.

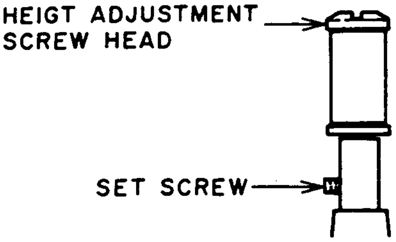

HEIGT ADJUSTMENT SCREW HEAD
SET SCREW

Fig. 5-11

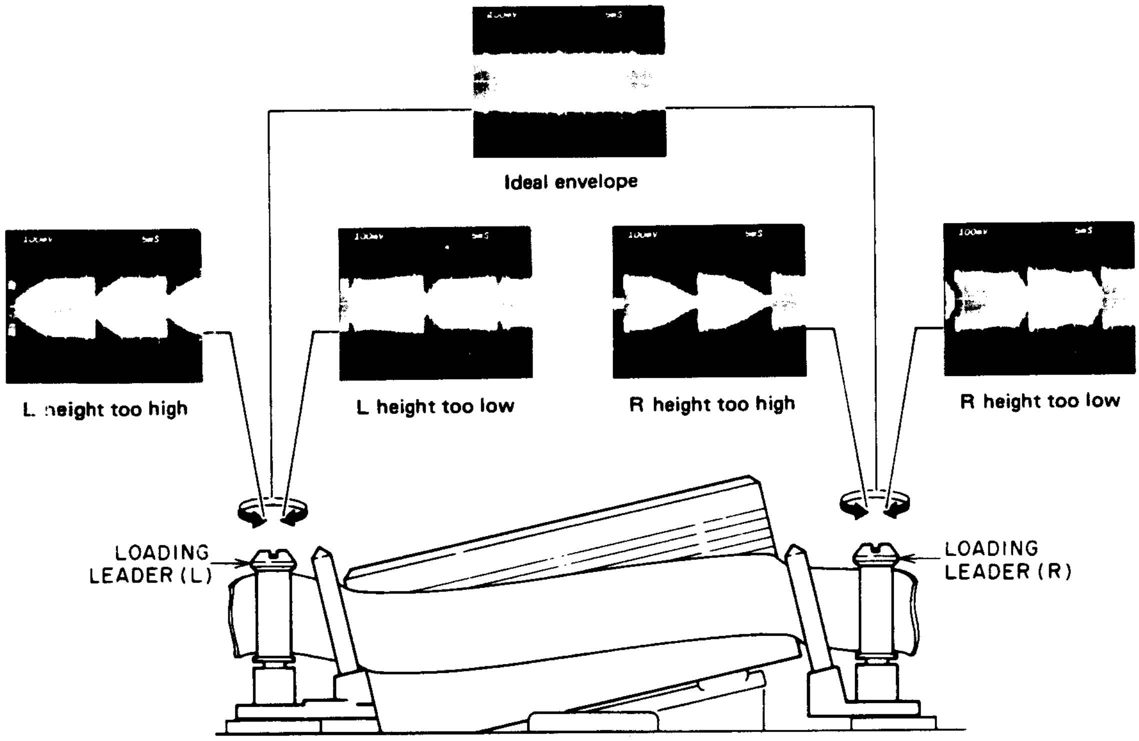
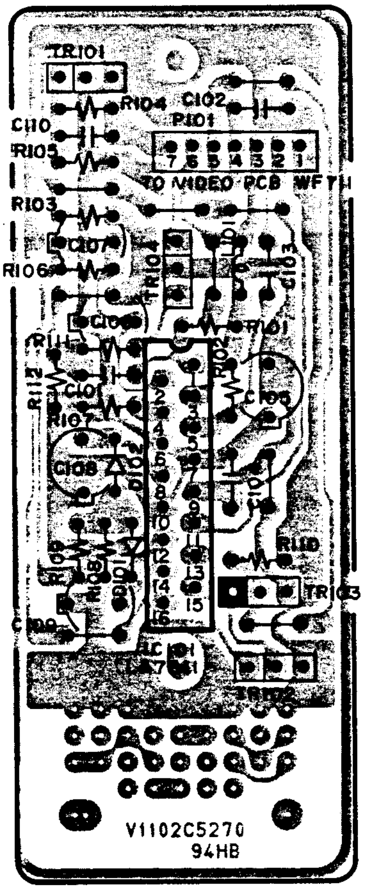
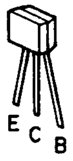

Ideal envelope
L height too high
L height too low
R height too high
R height too low
LOADING LEADER (L)
LOADING LEADER (R)

Fig. 5-12


TR101
R104
C102
P101
C110
R105
7 6 5 4 3 2 1
TO VIDEO PCB WF7H
R103
C107
TR104
C103
R106
C106
TR101
R111
R102
R112
C101
C105
R107
C108
D103
C104
R110
R109
R108
D101
TR103
C109
IC101
TR102
V1102C5270
94HB

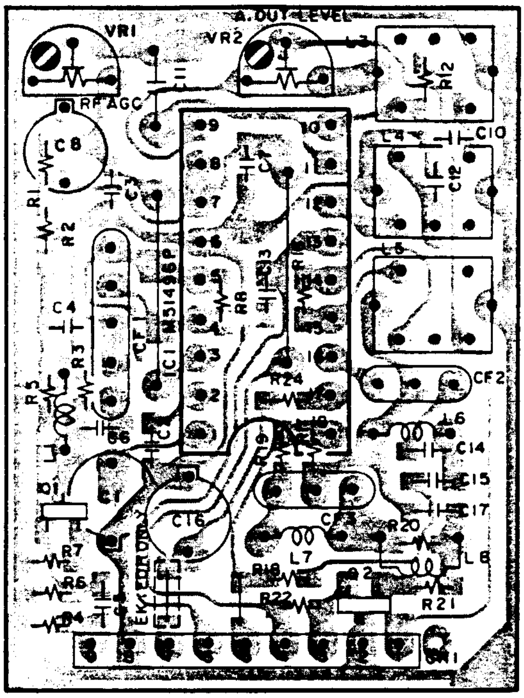
P/S AUTO PCB
V1102C5270



DTA114ES
DTC114ES
2SC3330

B C E
■ ● ● = PNP TRANSISTOR

B C E
● ● ● = NPN TRANSISTOR


A.OUT LEVEL
VR1
VR2
RF AGC
L3
R12
C8
R1
R2
C3
C7
L4
C10
C12
L5
IC1 M51496P
CF1
C4
R3
R5
R8
R13
C2
R24
CF2
L6
C14
C15
C17
C6
C5
D1
C1
C16
R19
C13
R20
L8
R7
R6
R4
EW CIRCUIT
L7
R18
R22
Q2
R21
CN1
9
8
7
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16

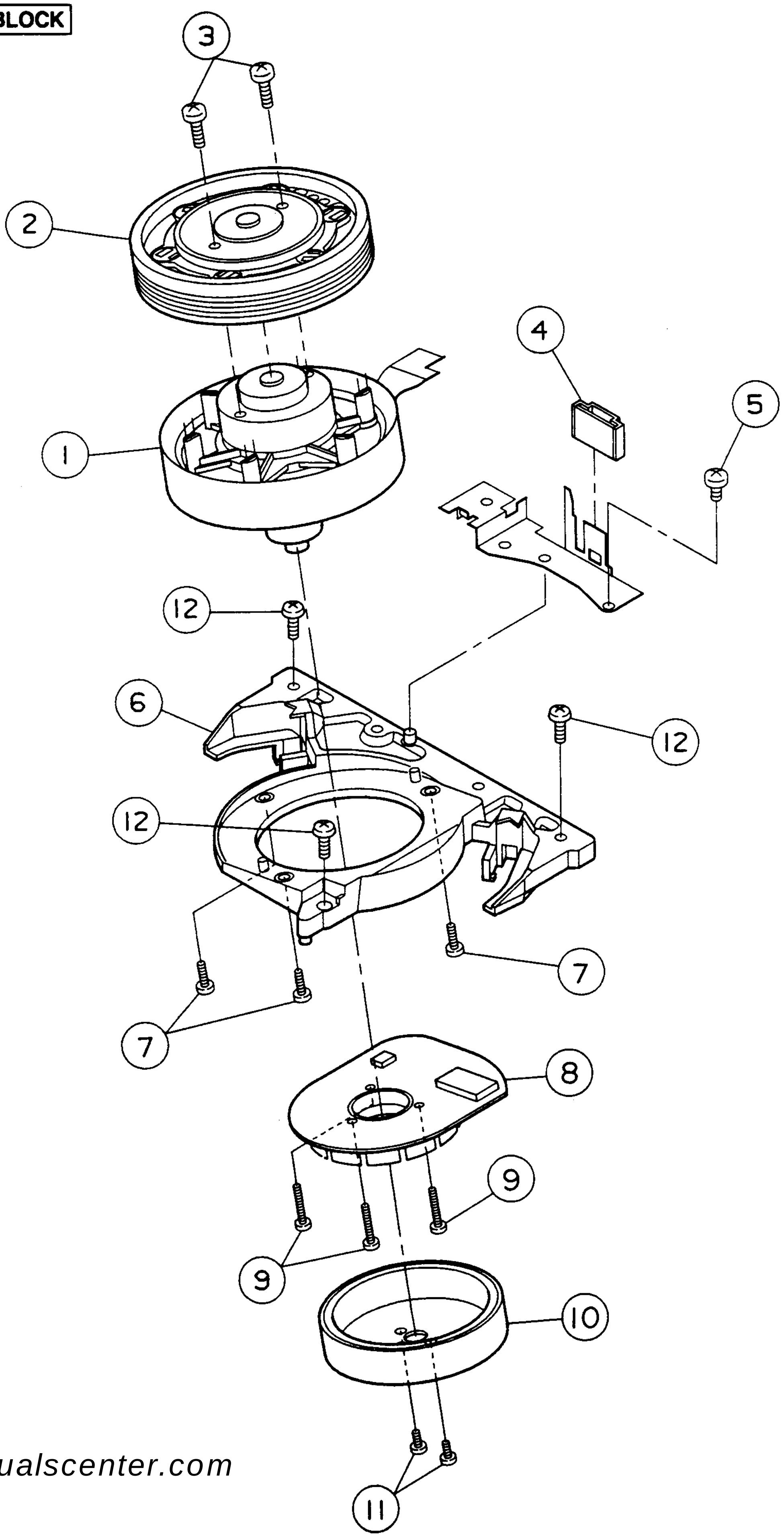
VIF UNIT 6B00663A1

2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1A	BV-V1102A410A	LOWER DRUM BLK 425EA [422/425/427/485]
1B	BV-V1102A410B	LOWER DRUM BLK 465EA [467]
2A	BV-V1102A420A	UPPER DRUM BLK [422/425/427/485]
2B	BV-V1102A420C	UPPER DRUM BLK [467]
3	ZS-321298	BID30X08STL CMT
4	SZ-387388J	HOLDER FPC
5	ZS-379405	BID30X06STL CMT
6	MA-387474J	BASE DRUM
7	ZS-563444	BID26X08STL CMT
8A	BM-M3225A020A	PC MOTOR BLK SM-250
8B	BM-M3227A020A	PC MOTOR BLK SM-270
9	ZS-467796	PAN26X12STL CMT
10	BV-B373848	YOKE MAGNET PART
11	ZS-479474	PAN26X05STL CMT
12	ZS-370047	DT BID30X12STL CMT

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

HEAD DRUM BLOCK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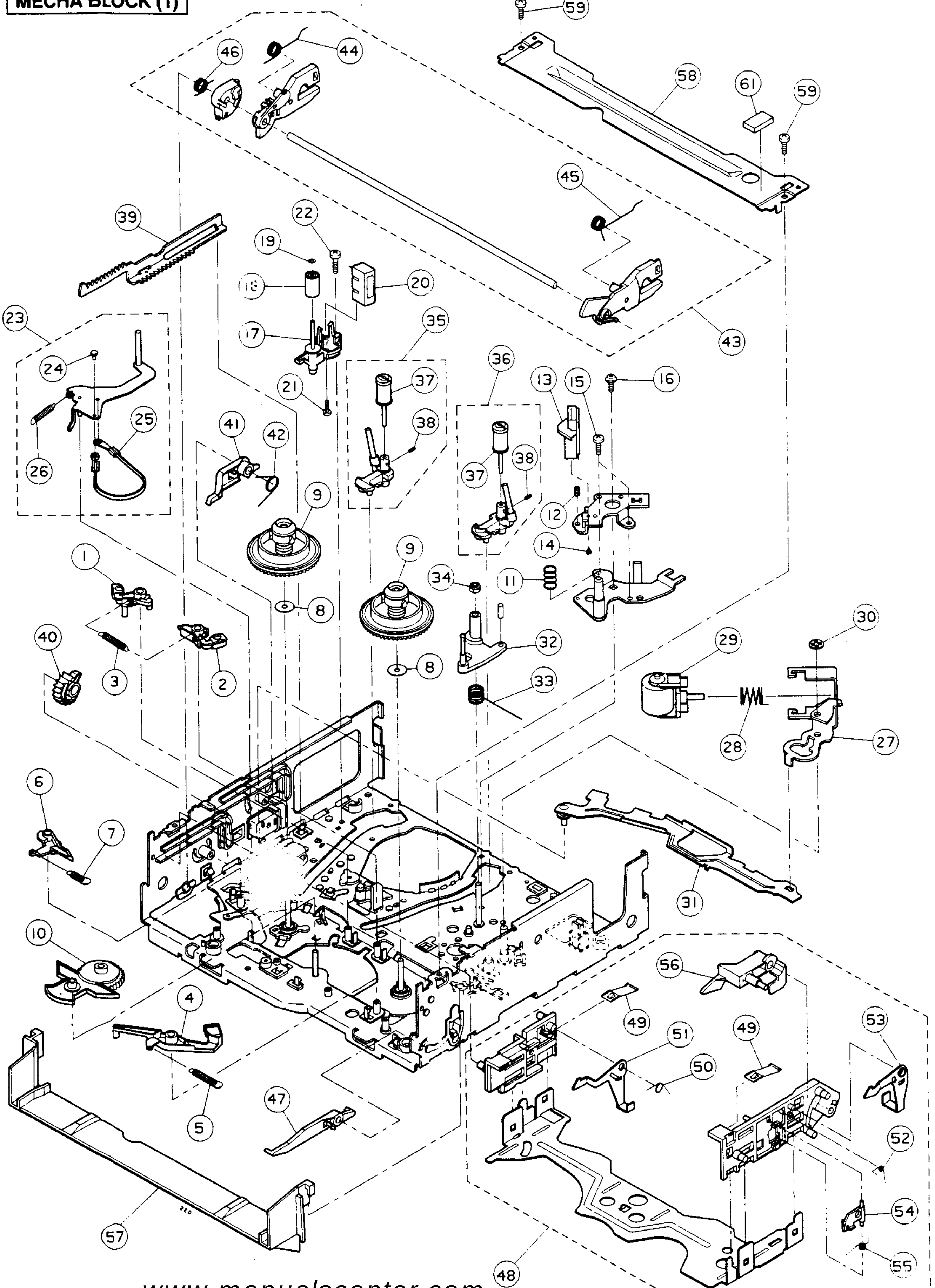
MECHA BLOCK (1)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34
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2
8
33
30
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28
27
6
7
31
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56
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48

3. MECHA BLOCK (1)

Ref. No.	Part No.	Description
1	ML-387316J	MAIN BRAKE(S) PART
2	ML-387318J	MAIN BRAKE(T) PART
3	ZG-387320J	SP PULL MAIN BRAKE
4	ML-387321J	REVIEW BRAKE PART
5	ZG-387323J	SP PULL REVIEW BRAKE
6	ML-387423J	ARM LOADING BRAKE
7	ZG-387467J	SP PULL LOADING BRAKE
8	ZW-389814J	PW31X110X050PSL
9	MT-390954J1	DISK (2)PART
10	MI-387294J	IDLLER PART
11	ZG-387438J	SP PUSH A/C
12	ZG-373900	6SET30X080SCM PKR CP
13A	HR-390015J	HEAD COMBO HVMZA1045C [EOH-E,EOG,EM-E]
13B	HR-389866J	HEAD COMBO HVSMC1017A [EK-B]
14	ZS-373899	PAN20X2.5STL BDY PS1
15	ZS-321298	BID30X08STL CMT
16	ZS-389853J	DT BID30X06STL CMT C080
17	MZ-387495J	HOLDER FE HEAD PART
18	MR-387286J	ROLLER IMPEDANCE
19	ZW-374445	SLIT W17X032X025PSL
20	HE-361456	HEAD E HVFMD0015B
21	ZS-477876	PAN20X03STL CMT
22	ZS-370047	DT BID30X12STL CMT
23	BL-V1102A050A	TENSION ARM BLK 425EA
24	SZ-387263J	HOLDER LEVER TENSION
25	ML-390768J	TENSION BAND PART
26	ZG-387272J	SP PULL TENSION
27	ML-387433J2	ARM PINCH
28	ZG-387276J	SP PUSH PINCH
29	BL-387501J	HOLDER PINCH PART
30	ZW-332843	RETAINING RING GRIP 380STL ACP
31	ML-387431J	SLIDER PINCH PART
32	ML-387277J	ARM REVIEW PART
33	ZG-387282J	SP TORSION REVIEW
34	ZW-350839	N30 NYLON
35	BV-V1102A070A	LEADER S BLK 425EA
36	BV-V1102A080A	LEADER T BLK 425EA
37	VT-387394J	GUIDE ROLLER D8 PART
38	ZS-374458	6SET20X030SCM PKR FP
39	ML-387428J	SLIDER FRONT LOADING
40	MZ-387335J	GEAR EJECT
41	ML-391745J1	ARM DAMPER
42	ZG-391744J	SP TORSION ARM DAMPER
43	BL-V1102A140A	ARM LOADING BLK 425EA
44	ZG-387417J	SP TORSION LOAD(S)
45	ZG-387418J	SP TORSION LOAD(T)
46	ZG-392831J	SP TORSION JOINT(2)
47	ML-387350J1	ARM LID OPENER
48	BV-V1102A150A	CASSETTE LOAD BLK 425EA
49	ZG-387348J	SP PLATE HOLDER
50	ZG-387421J	SP TORSION DAMPER(S)
51	ML-387345J	LEVER DAMPER(S)
52	ZG-388290J	SP TORSION DAMPER(T)
53	ML-387346J	LEVER DAMPER(T)
54	ML-387344J	LEVER LOCK RELEASE
55	ZG-387420J	SP TORSION RELEASE
56	ML-387349J	ARM SHUTTER
57	SE-387343J	GUIDE FRONT
58	MZ-387351J	PLATE UPPER
59	ZS-364543	DT BID30X06STL CMT
60A	BB-V1102A020A	MECHA DECK BLK 425EA [EOH-E,EOG,EM-E]
60B	BB-V1102A020C	MECHA DECK BLK 427EK [EK-B]
61	SZ-391866J1	CUSHION COVER

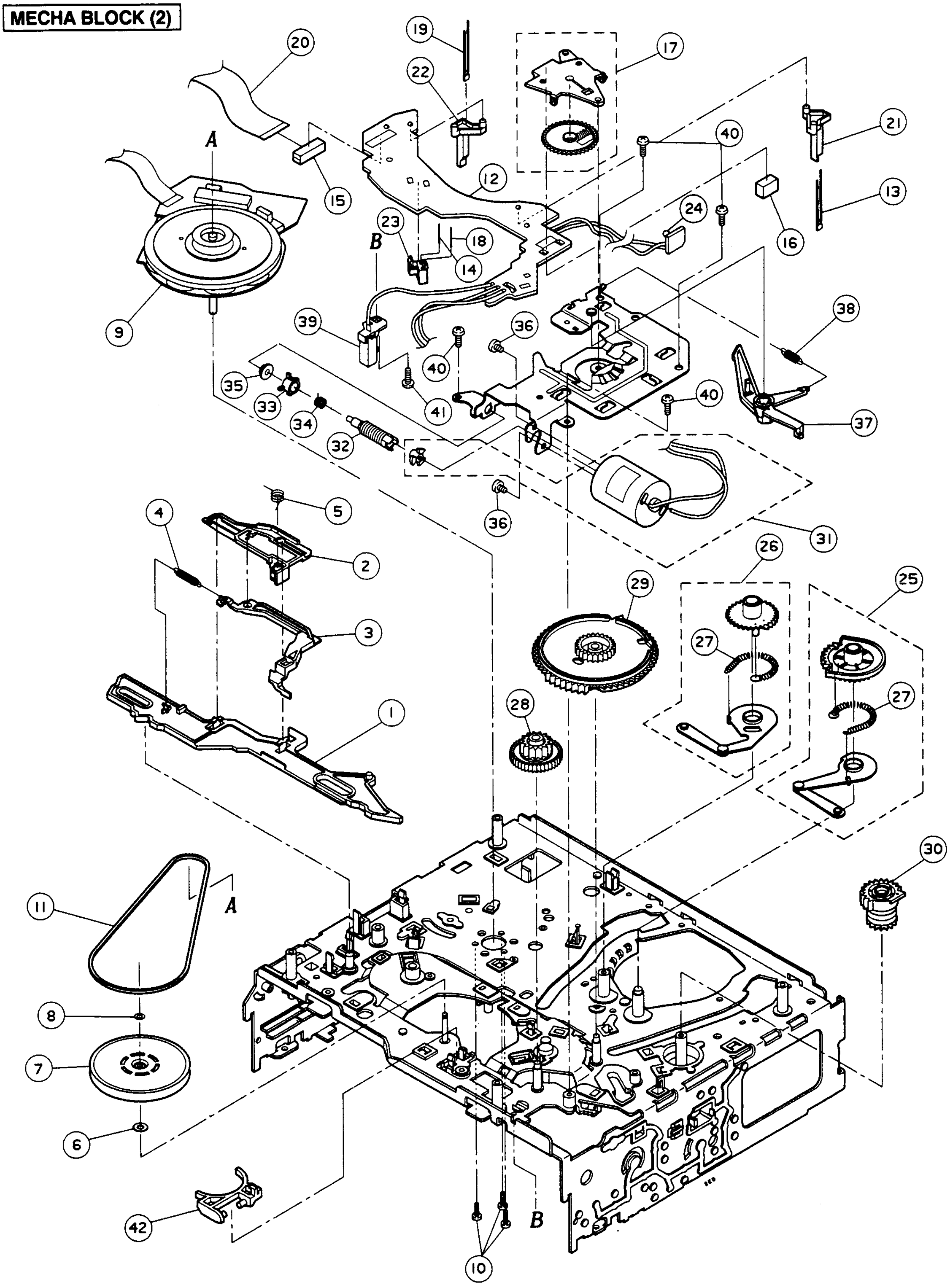
NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

4. MECHA BLOCK (2)

Ref. No.	Part No.	Description
1	ML-387324J	SLIDER BRAKE PART
2	ML-387327J	SLIDER TRIGGER
3	ML-387402J	LEVER TRIGGER
4	ZG-387468J	SP PULL SLIDER
5	ZG-387403J	SP TORSION COUPLING
6	ZW-389923J	PW26X060X050PSL
7	MZ-387298J1	DISK CLUTCH PART
8	ZW-387492J	SLIT W21X040X050PSL
9	BM-386236J	MOTOR DFX-67B3VWA1
10	ZS-365149	PT BID26X06STL CMT
11	MB-387289J	BELT CAPSTAN
12	EA-387496J	PC(#)SENSOR
13	ED-390011J	D LED GL451 INFRARED [D1]
14	ED-390012J	D LED GL4800 INFRARED [D2]
15	EJ-387497J	SOCKET HOUSING 5062-30-10-13
16	EJ-381837J	SOCKET 174074-5 5P
17	ES-387465J	SW MODE SELECT MMS00070ZLBO
18	ET-390010J	TR PHOTO PT4800 [PTR2]
19	ET-390009J	TR PHOTO PT493F [PTR4]
20	EW-389313J	CORD FFC P1.25 L=120 13P
21	MZ-387430J	HOLDER D-LED
22	MZ-387445J	HOLDER S SENSOR
23	MZ-387446J	HOLDER PHOTO SENSOR
24	ET-361490	TR PHOTO PN268 R,S [PTR1]
25	MZ-V1102A090A	GEAR TOGGLE (S) BLK 425EA
26	MZ-V1102A100A	GEAR TOGGLE (T) BLK 425EA
27	ZG-387413J	SP PULL TOGGLE
28	MZ-387332J	GEAR WORM WHEEL
29	MZ-387331J	GEAR CAM SLIDER
30	MZ-387333J	GEAR FRONT LOADING
31	BM-387503J	MOTOR PART
32	MZ-387330J	GEAR WORM PART
33	MR-391968J	PULLEY TRIGGER(2)
34	ZG-387443J	SP TRIGGER
35	MR-387406J	HOLDER THRUST WORM
36	ZS-432674	PAN30X03STL CMT
37	BL-387458J1	CAPSTAN BRAKE PART
38	ZG-387502J	SP PULL CAPSTAN BRAKE
39	ES-373099	SW LEAF MTS10110M[illegible]1
40	ZS-389950J	PT BID26X10STL CMT
41	ZS-364543	DT BID30X06STL CMT
42	ML-387311J1	ARM COUPLING

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHA BLOCK (2)


19
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5. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1A	BA-V1102D605A	PC(#) MAIN(PAL) BLK 422EOH(E) [EOH-E] [422]
1B	BA-V1102A605E	PC(#) MAIN(PAL) BLK 425EOG [EOG]
1C	BA-V1102D605B	PC(#) MAIN(PAL) BLK 425EOH(E) [EOH-E] [425]
1D	BA-V1102A600G	PC(#) MAIN(PAL) BLK 425EM [EM-E]
1E	BA-V1102D600C	PC(#) MAIN(PAL) BLK 427EK [EK-B] [427]
1F	BA-V1102A600M	PC(#) MAIN(PAL) BLK 467EK [EK-B] [467]
1G	BA-V1102D600D	PC(#) MAIN(PAL) BLK 485EK [EK-B] [485]
2A	BA-V1102D500C	PC(#) POWER BLK 425EOH [EOH-E]
2B	BA-V1102A500G	PC(#) POWER BLK 425EOG [EOG]
2C	BA-V1102A510A	PC(#) POWER EM BLK 425EM [EM-E]
2D	BA-V1102D500F	PC(#) POWER BLK 467EK [EK-B]
3A	BA-V1110D630F	PC OPERATION(A) BLK 422EOH [EOH-E] [422]
3B	BA-V1102A630E	PC OPERATION(B) BLK 425EOG [EOG]
3C	BA-V1102D630D	PC OPERATION(B) BLK 425EOH [EOH-E] [425]
3D	BA-V1102A630B	PC OPERATION(B) BLK 425EM [EM-E]
3E	BA-V1110D630B	PC OPERATION(A) BLK 427EK [EK-B] [427]
3F	BA-V1110A630D	PC OPERATION(A) BLK 467EK [EK-B] [467]
3G	BA-V1110D630C	PC OPERATION(A) BLK 485EK [EK-B] [485]
4A	BA-V1102A610A	PC PRE AMP(1) BLK 425EA [EXCEPT 467EK]
4B	BA-V1102A620A	PC PRE AMP(2) BLK 467EK [EK-B] [467]
5	BA-V1102A670A	PC VPT BLK VPS [EOG]
6A	BA-V1110D680A	PC(#) LINEAR STEREO BLK 427EK [EK-B] [427/467]
6B	BA-V1110D680B	PC(#) LINEAR STEREO BLK 485EK [EK-B] [485]
7	BA-389398J	NICAM UNIT [EK-B] [485]
8	BA-N4009A020C	PC REMOCON BLK RC-V766A-EB [EOH-E,EOG] [425]

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD
- MAIN P.C BOARD
- VIDEO P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARD (EXCEPT EM)
- POWER SUPPLY P.C BOARD
- DIODE P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARD (EM ONLY)
- POWER SUPPLY (1) P.C BOARD
- POWER SUPPLY (2) P.C BOARD
- TR P.C BOARD

PC (#) LINEAR STEREO BLK CONSISTS OF FOLLOWING P.C BOARD
- LINEAR STEREO (A) P.C BOARD
- LINEAR STEREO (B) P.C BOARD

6. MAIN P.C BOARD

Ref. No.	Part No.	Description
C480	EC-391843J	C DOUBLE FYDOH 223Z 5.5DC
D1	ED-387766J	D ZENER H HZS12A2L F05 [EOH-E,EOG,EK-B]
D3	ED-307572	D SILICON H 1SS131 [EOH-E,EOG]
D4	ED-307572	D SILICON H 1SS131 [EOH-E,EOG]
D10	ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D21	ED-307572	D SILICON H 1SS131 [EOG]
D22	ED-307572	D SILICON H 1SS131 [EOG]
D40	ED-307572	D SILICON H 1SS131 [EOH-E,EOG,EK-B]
D41	ED-388368J	D ZENER H HZS9B3L F05 [EOH-E,EOG,EK-B]
D90	ED-367502	D ZENER H HZS9A1L F05 [EOH-E]
D91	ED-307572	D SILICON H 1SS131 [EOH-E]
D101	ED-307572	D SILICON H 1SS131
D102	ED-307572	D SILICON H 1SS131 [EOH-E,EOG,EM-E]
D103	ED-307572	D SILICON H 1SS131 [EOH-E]
D106	ED-307572	D SILICON H 1SS131
D107	ED-307572	D SILICON H 1SS131
D203	ED-389418J	D ZENER H HZS5.1B3S T26
D204	ED-624903	D SILICON H 1S2473
D206	ED-389840J	D SILICON 1SR139-100HS F10
D207	ED-388359J	D ZENER H HZS4B2
D211	ED-307572	D SILICON H 1SS131
D212	ED-307572	D SILICON H 1SS131
D301	ED-624903	D SILICON H 1S2473
D302	ED-307572	D SILICON H 1SS131
D306	ED-307572	D SILICON H 1SS131 [EOH-E,EOG,EM-E]
D402	ED-307572	D SILICON H 1SS131
D403	ED-307572	D SILICON H 1SS131
D404	ED-307572	D SILICON H 1SS131
D405	ED-624903	D SILICON H 1S2473
D406	ED-624903	D SILICON H 1S2473
D407	ED-346417	D ZENER H HZ2C3FA F10
D408	ED-307572	D SILICON H 1SS131
D409	ED-387763J	D ZENER H HZS7B3L F05
D410	ED-388368J	D ZENER H HZS9B3L F05
D411	ED-307572	D SILICON H 1SS131
D412	ED-307572	D SILICON H 1SS131
D413	ED-307572	D SILICON H 1SS131
D414	ED-307572	D SILICON H 1SS131
D416	ED-366684	D SILICON H 1SS136 F05
D417	ED-366684	D SILICON H 1SS136 F05
D418	ED-389688J	D ZENER H HZS5B2
D419	ED-307572	D SILICON H 1SS131
D420	ED-307572	D SILICON H 1SS131
D421	ED-307572	D SILICON H 1SS131
D422	ED-388387J	D ZENER H HZS30-2L T26
D423	ED-307572	D SILICON H 1SS131
D424	ED-387919J	D ZENER H HZS6A1L F05
D425	ED-307572	D SILICON H 1SS131
D481	ED-307572	D SILICON H 1SS131
FL301	EO-388362J	COIL OSC 1 V1102 [EOH-E,EOG,EM-E]
FR498	*ER-393219J	R FUSE H S10 RF25S 1/4W 4R7J [EXCEPT 427EK/467EK]
FR523A	*ER-393220J	R FUSE H S10 RF25S 1/4W 220J [EM-E,EK-B] [425/485]
FR523B	*ER-393222J	R FUSE H S10 RF25S 1/4W 100J [EOH-E,EOG] [422/425]
IC10	EI-337530	IC UPC574J
IC20	EI-390053J	IC LA7910 [EOH-E,EOG,EM-E]
IC101	EI-310036	IC TC4066BP [EOH-E,EOG,EM-E]

Ref. No.	Part No.	Description
IC102	EI-388996J	IC M50455-142SP
IC201	EI-346071	IC M5218L-771
IC301	EI-388360J	IC BA7765AS [EOH-E,EOG,EM-E]
IC401	EI-388380J1	IC SX2777AS
IC402	EI-373980	IC BA15218N
IC403	EI-385956J	IC UPD75108CW-A54 SXSYP2
IC404	EI-373981J1	IC BA10393N
IC405	EI-353421	IC BA6229
L70A	EO-390998J	COIL FIX 1 LAP02 F05 R68K [EOH,EK][422/425/427/467]
L70B	EO-388803J	COIL FIX 1 LAP02 F05 R47K [EK-B] [485]
L71	EO-373260	COIL FIX 1 LAP02 F05 1R0K [EM-E]
L101	EO-351869	COIL FIX 1 LAP02 F05 820K [EOH-E,EOG,EM-E]
L102	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L103	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L104	EO-387782J	COIL FIX 1 EL0405SKI 2R2K
L105	EO-387782J	COIL FIX 1 EL0405SKI 2R2K
L106	EO-351866	COIL FIX 1 LAP02 F05 330K [EOH-E,EOG,EM-E]
L301	EO-390717J	COIL FIX 1 LHL06TB T05 103J [EOH-E,EOG,EM-E]
L302	EO-390716J	COIL FIX 1 LHL06TB T05 272J [EOH-E,EOG,EM-E]
L401	EO-354600	COIL FIX 1 LAP02 F05 101K
L402	EO-354600	COIL FIX 1 LAP02 F05 101K
L403	EO-351862	COIL FIX 1 LAP02 F05 100K
L404	EO-375471	COIL OSC 1 S033344
L405A	EO-391267J	COIL FIX 1 LHL06TB T05 182J [EOH-E,EOG,EM-E]
L405B	EO-392829J	COIL FIX 1 TL-8 182J [EK-B]
L407	EO-354600	COIL FIX 1 LAP02 F05 101K
L482	EO-354600	COIL FIX 1 LAP02 F05 101K
L483	EO-345927	COIL FIX 1 LAL03KH 101K
PJ101	EJ-387614J	PIN J T6353-ABCB YL BK 4P [EM-E]
PJ103	EJ-387613J	SOCKET M1812 21P [EOH-E,EOG]
R452A	ER-336756	R OMF H FS 1W R47J [EXCEPT 425EM/485EK]
R452B	ER-391043J	R FUSE H S10 RF25SC 1/6W R47K [EM-E,EK-B] [425/485]
TR1	ET-353899	TR 2SA1317 S,T,U [EOH-E,EOG,EM-E]
TR2	ET-354415	TR DTA144ES [EOH-E,EOG,EK-B]
TR3	ET-354414	TR DTC144ES
TR10	ET-375777	TR 2SC2926S P,Q
TR11	ET-353899	TR 2SA1317 S,T,U
TR30	ET-353899	TR 2SA1317 S,T,U
TR31	ET-360137	TR 2SC3330 U,V F05
TR32A	ET-360137	TR 2SC3330 U,V F05 [EOH-E]
TR32B	ET-353899	TR 2SA1317 S,T,U [EOG,EM-E,EK-B]
TR33	ET-353897	TR DTC114ES
TR40A	ET-355669	TR 2SC3246 G,H,J F05 [EOH-E,EOG]
TR40B	ET-385916J	TR 2SD2159 U,V F05 [EK-B]
TR90	ET-356236	TR FET 2SK363 GR,BL [EOH-E]
TR101	ET-360137	TR 2SC3330 U,V F05
TR102	ET-360137	TR 2SC3330 U,V F05 [EOH-E,EOG,EM-E]
TR103	ET-353899	TR 2SA1317 S,T,U
TR104	ET-356336	TR DTA114ES [EOH-E,EOG,EM-E]
TR105	ET-354414	TR DTC144ES [EOH-E,EOG,EM-E]
TR106	ET-354364	TR DTC143TS
TR107	ET-360137	TR 2SC3330 U,V F05 [EOH-E,EOG,EM-E]

Ref. No.	Part No.	Description
TR109	ET-353897	TR DTC114ES
TR110	ET-360137	TR 2SC3330 U,V F05
TR111	ET-354414	TR DTC144ES
TR112	ET-356336	TR DTA114ES
TR113	ET-353899	TR 2SA1317 S,T,U
TR114	ET-354414	TR DTC144ES
TR203	ET-388338J	TR 2SB1425 S,E
TR204	ET-354414	TR DTC144ES
TR205	ET-366168	TR 2SD1292 Q,R
TR206	ET-353899	TR 2SA1317 S,T,U
TR207	ET-360137	TR 2SC3330 U,V F05
TR301	ET-360137	TR 2SC3330 U,V F05 [EOH-E,EOG,EM-E]
TR303	ET-388338J	TR 2SB1425 S,E
TR304	ET-388338J	TR 2SB1425 S,E
TR305	ET-354414	TR DTC144ES [EXCEPT 467EK]
TR306	ET-353899	TR 2SA1317 S,T,U
TR401	ET-354414	TR DTC144ES
TR402	ET-354414	TR DTC144ES
TR403	ET-354414	TR DTC144ES
TR404	ET-363953	TR DTA114TS
TR405	ET-354414	TR DTC144ES
TR406	ET-354414	TR DTC144ES
TR408	ET-366168	TR 2SD1292 Q,R
TR409	ET-360137	TR 2SC3330 U,V F05
TR410	ET-360137	TR 2SC3330 U,V F05
TR411	ET-360137	TR 2SC3330 U,V F05
TR412	ET-353899	TR 2SA1317 S,T,U
VR101	EV-390141J	R S-FIX H T05 RH0634C 0.1W 332
VR301	EV-390869J	R S-FIX H T05 RH0634C 0.1W 103 [EOH-E,EOG,EM-E]
VR302	EV-390874J	R S-FIX H T05 RH0634C 0.1W 473 [EOH-E,EOG,EM-E]
VR401	EV-390872J	R S-FIX H T05 RH0634C 0.1W 223
X101	EI-389974J	OSC X'TAL HC-49/U 17.734475MHZ
X401	EI-385940J	OSC CE CST4.19MGWTF 4.194MHZ
1A	EE-390143J	TV TUNER TERE3-001A HYP.EO [EOH-E]
1B	EE-387604J	TV TUNER TERE1-007A EOG [EOG]
1C	EE-387602J	TV TUNER VTSB6CZ EV [EM-E]
1D	EE-387607J	TV TUNER TERB1-008A EK [EK-B]
2A	BV-390052J	RF CONVERTER ENC-87975 EO [EOH-E,EOG]
2B	BV-387635J	RF CONVERTER MDLK6B063A EK [EK-B]
2C	BV-387611J	RF CONVERTER YAA21-0454 EV [EM-E]
3A	SP-387357J	PANEL REAR JACK EK [EOH-E]
3B	SP-388305J	PANEL REAR JACK EOG [EOG]
3C	SP-388307J	PANEL REAR JACK EA [EM-E]
3D	SP-389825J	PANEL REAR JACK EK(S) [EK-B]

7. VIDEO P.C BOARD

Ref. No.	Part No.	Description
D601	ED-307572	D SILICON H 1SS131
D604	ED-392779J	D SCHOTTKY 1SS198 T26
D605	ED-307572	D SILICON H 1SS131
D675	ED-307572	D SILICON H 1SS131
D701	ED-307572	D SILICON H 1SS131
D702	ED-307572	D SILICON H 1SS131
DL701	EH-390730J	DL EFD-JF124A13J
FL601	EH-368821	FILTER LC LP MYV-23R
FL602	EH-392816J	FILTER LC LP SEL-4801
FL701	EH-364045	FILTER LC FF-78P
IC601	EI-373966	IC MSM6965-3RS
IC602	EI-388347J	IC AN3247K
IC701	EI-381630J	IC LA7330
L601	EO-354600	COIL FIX 1 LAP02 F05 101K
L602	EO-387782J	COIL FIX 1 EL0405SKI 2R2K
L603	EO-387782J	COIL FIX 1 EL0405SKI 2R2K
L604	EO-357508	COIL FIX 1 LAP02 F05 151K
L605	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L606	EO-351862	COIL FIX 1 LAP02 F05 100K
L607	EO-360555	COIL FIX 1 LAP02 F05 180K
L608	EO-351868	COIL FIX 1 LAP02 F05 470K
L609	EO-354600	COIL FIX 1 LAP02 F05 101K
L701	EO-388087J	COIL FIX 1 LF-5.0S F05 331K
L702	EO-388353J	COIL FIX 1 LF-5.0S F05 471K
L703	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L704	EO-351867	COIL FIX 1 LAP02 F05 390K
L705	EO-353900	COIL FIX 1 LAP02 F05 150K
L706	EO-345871	COIL FIX 1 EL0606SKI 180J
L707	EO-368619	COIL FIX 1 LAP02 F05 3R3K
L708	EO-351868	COIL FIX 1 LAP02 F05 470K
L709	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L710	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L771	EO-364966	COIL FIX 1 LAP02 F05 120K [EOH-E,EOG,EM-E]
TR601	ET-353899	TR 2SA1317 S,T,U
TR602	ET-353899	TR 2SA1317 S,T,U
TR603	ET-360137	TR 2SC3330 U,V F05
TR671	ET-360137	TR 2SC3330 U,V F05 [EOH-E,EOG,EK-B]
TR701	ET-353897	TR DTC114ES
TR702	ET-354414	TR DTC144ES
TR703	ET-353899	TR 2SA1317 S,T,U
TR704	ET-360137	TR 2SC3330 U,V F05
TR705	ET-360137	TR 2SC3330 U,V F05
TR707	ET-360137	TR 2SC3330 U,V F05
TR708	ET-360137	TR 2SC3330 U,V F05
TR710	ET-360137	TR 2SC3330 U,V F05
TR711	ET-360137	TR 2SC3330 U,V F05
TR712	ET-353899	TR 2SA1317 S,T,U
TR771A	ET-353897	TR DTC114ES [EOH-E]
TR771B	ET-364060	TR DTC143ES [EOG,EM-E]
TR772A	ET-356336	TR DTA114ES [EOH-E]
TR772B	ET-354370	TR DTA124ES [EOG,EM-E]
VR601	EV-390869J	R S-FIX H T05 RH0634C 0.1W 103
VR602	EV-390873J	R S-FIX H T05 RH0634C 0.1W 472
VR603	EV-389868J	R S-FIX H T05 RH0634C 0.1W 682
VR604	EV-390141J	R S-FIX H T05 RH0634C 0.1W 332
VR605	EV-390871J	R S-FIX H T05 RH0634C 0.1W 153
VR606	EV-390871J	R S-FIX H T05 RH0634C 0.1W 153
X701	EI-381632J	OSC X'TAL(86686) 4.433619MHZ

8. PRE-AMP P.C BOARD (EXCEPT 467EK)

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
IC1	EI-387598J	IC BA7252S
L1	EO-376857	COIL FIX 1 LF-5.0S F05 5R6K
L3	EO-376858	COIL FIX 1 LF-5.0S F05 560K
L4	EO-376606	COIL FIX 1 LF-5.0S F05 180K
L5	EO-381193J	COIL FIX 1 EL0405SKI 271K
L6	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L8	EO-376859	COIL FIX 1 LF-5.0S F05 8R2K
L9	EO-376603	COIL FIX 1 LF-5.0S F05 150K
L11	EO-376612	COIL FIX 1 LF-5.0S F05 680K
L12	EO-381191J	COIL FIX 1 EL0405SKI 181K
L13	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L14	EO-376610	COIL FIX 1 LF-5.0S F05 330K
L15	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
P2	EJ-387587J	SOCKET 8370-67-800 6P
PS3	EJ-389318J	SOCKET HOUSING 5062-30-10-09
TR1	ET-353899	TR 2SA1317 S,T,U
TR2	ET-360137	TR 2SC3330 U,V F05
TR4	ET-360137	TR 2SC3330 U,V F05
TR6	ET-360137	TR 2SC3330 U,V F05
TR7	ET-360137	TR 2SC3330 U,V F05
VR1	EV-390157J	R S-FIX V KVSF639A 0.10W 102
VR2	EV-391042J	R S-FIX V KVSF639A 0.10W 501
WP3	EW-389312J	CORD FFC P1.25 L=180 9P

9. PRE-ANP P.C BOARD (467EK ONLY)

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131
D8	ED-307572	D SILICON H 1SS131
D10	ED-307572	D SILICON H 1SS131
IC1	EI-387586J	IC BA7244BS
L1	EO-376858	COIL FIX 1 LF-5.0S F05 560K
L2	EO-376603	COIL FIX 1 LF-5.0S F05 150K
L3	EO-381193J	COIL FIX 1 EL0405SKI 271K
L4	EO-376614	COIL FIX 1 LF-5.0S F05 220K
L5	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L6	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L7	EO-376607	COIL FIX 1 LF-5.0S F05 181K
L8	EO-376612	COIL FIX 1 LF-5.0S F05 680K
L10	EO-380734J	COIL FIX 1 LF-5.0S F05 6R8K
L11	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L12	EO-376610	COIL FIX 1 LF-5.0S F05 330K
L14	EO-376857	COIL FIX 1 LF-5.0S F05 5R6K
L15	EO-376859	COIL FIX 1 LF-5.0S F05 8R2K
P1	EJ-387587J	SOCKET 8370-67-800 6P
PS1	EJ-389815J	SOCKET HOUSING 5062-30-10-15
TR1	ET-360137	TR 2SC3330 U,V F05
TR2	ET-360137	TR 2SC3330 U,V F05
TR4	ET-360137	TR 2SC3330 U,V F05
TR10	ET-354414	TR DTC144ES
TR11	ET-353899	TR 2SA1317 S,T,U
TR12	ET-360137	TR 2SC3330 U,V F05
VR1	EV-391042J	R S-FIX V KVSF639A 0.10W 501
VR2	EV-390157J	R S-FIX V KVSF639A 0.10W 102
WP1	EW-389317J	CORD FFC P1.25 L=180 15P

10. OPERATION P.C BOARD

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-387765J	D ZENER H HZS9C1L F05
D3	ED-307572	D SILICON H 1SS131
D4	ED-382620J	D LED PG5562X GREEN
D5	ED-307572	D SILICON H 1SS131 [EOH-E,EOG]
D6	ED-307572	D SILICON H 1SS131
	ED-307572	D SILICON H 1SS131
D8	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D10	ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131
D16	ED-307572	D SILICON H 1SS131 [EK-B]
D18	ED-307572	D SILICON H 1SS131 [EK-B] [467]
D21	ED-307572	D SILICON H 1SS131 [EK-B]
D24	ED-307572	D SILICON H 1SS131 [EOH-E]
D25	ED-307572	D SILICON H 1SS131 [EK-B]
D26	ED-307572	D SILICON H 1SS131 [EK-B] [485]
D27	ED-307572	D SILICON H 1SS131 [EK-B] [485]
D28	ED-307572	D SILICON H 1SS131 [EOH,EOG,EK][422/425/485]
D30	ED-307572	D SILICON H 1SS131 [EOG]
FL1A	EM-387624J	IND FL FV345G CHARACTER [EOH-E,EM-E]
FL1B	EM-387625J	IND FL FV374G CHARACTER [EOG]
FL1C	EM-389833J	IND FL FV392G CHARACTER [EK-B]
IB1	EH-387619J	COMP R RGLE14X 103J
IB2	EH-383083J	COMP R RGLE3X 103J
IB4	EH-378541J	COMP R RGLE3X 473J
IC1	EI-385955J	IC UPD75216A-268 SXOPP2
IC2	EI-387620J	IC BR93C46
IC3	EI-373955	IC S-8053ALR
PH1	ET-381637J1	DETECTOR GP1U521X
PS1	EJ-389815J	SOCKET HOUSING 5062-30-10-15
PS2	EJ-387497J	SOCKET HOUSING 5062-30-10-13
SW1	ES-349474	SW TACT SKHHAM004A
SW2	ES-349474	SW TACT SKHHAM004A
SW3	ES-349474	SW TACT SKHHAM004A
SW4	ES-349474	SW TACT SKHHAM004A
SW5	ES-349474	SW TACT SKHHAM004A
SW7	ES-349474	SW TACT SKHHAM004A
SW8	ES-349474	SW TACT SKHHAM004A
SW9	ES-349474	SW TACT SKHHAM004A
SW10	ES-349474	SW TACT SKHHAM004A
SW11	ES-349474	SW TACT SKHHAM004A
SW12	ES-349474	SW TACT SKHHAM004A
SW13	ES-349474	SW TACT SKHHAM004A
SW14	ES-349474	SW TACT SKHHAM004A [EK-B]
SW15	ES-349474	SW TACT SKHHAM004A
SW16	ES-349474	SW TACT SKHHAM004A
SW17	ES-349474	SW TACT SKHHAM004A
SW18	ES-349474	SW TACT SKHHAM004A
SW19	ES-349474	SW TACT SKHHAM004A
SW20	ES-390156J	SW SLIDE SSSS91690A 1-01-02N [EOH,EOG,EK][422/425/485]
SW21	ES-390156J	SW SLIDE SSSS91690A 1-01-02N [EOH-E,EK-B]
TR1	ET-354414	TR DTC144ES
TR2	ET-360137	TR 2SC3330 U,V F05
TR3	ET-354414	TR DTC144ES

Ref. No.	Part No.	Description
TR4	ET-360137	TR 2SC3330 U,V F05
TR5	ET-360137	TR 2SC3330 U,V F05
TR6	ET-373985	TR DTA144TS [EK-B] [485]
TR7	ET-373985	TR DTA144TS [EK-B] [485]
TR8	ET-373985	TR DTA144TS [EOH,EOG,EK][422/425/485]
WP1	EW-389315J	CORD FFC P1.25 L=120 15P
WP2	EW-389314J	CORD FFC P1.25 L=170 13P
X1	EI-388110J	OSC CE CST4.19MG 4.194MHZ
X2	EI-368825	OSC X'TAL MX-38T 32.768KHZ

11. VIF UNIT

Ref. No.	Part No.	Description
CF1A	EH-373914	FILTER CE SAF38.9MZ70Z [EOH-E,EM-E]
CF1B	EH-373917	FILTER CE SAF39.5MZ70Z [EK-B] [427/467]
CF1C	EH-725826J	FILTER CE SAF38.9MZY71Z [EOG]
CF1D	EH-714628	FILTER SAW SAF39.5MZ70Z [EK-B] [485]
CF2A	ER-373620	R CB H F10 HQ RDS 1/4W 330J [EOH-E,EM-E,EOG]
CF2B	EH-373921	FILTER CE SFE6.0MB [EK-B] [427/467]
CF2C	EH-725829J	FILTER CE SFT6.0MA [EK-B] [485]
CF3A	EH-368948	FILTER CE TPS5.5MW 5.5000MHZ [EOH-E,EOG]
CF3B	EH-373918	FILTER CE TPS5.5MB [EM-E]
CF3C	EH-373919	FILTER CE TPS6.0MB [EK-B]
CF4	EH-725827J	FILTER CE SAF32.9MDE70Z [EK-B] [485]
IC1	EI-368809	IC M51496P
IC2	EI-730158J	IC TA8703S [EK-B] [485]
L1A	EO-387800J	COIL FIX 1 EL0405SKI 2R7K [EXCEPT 485EK]
L1B	EO-381188J	COIL FIX 1 EL0405SKI 1R0K [EK-B] [485]
L2	EO-717495	COIL RF 7KL 6F16151B1 [EK-B] [485]
L3A	EO-725953J	COIL SIF DET 6F16263A2 [EOH-E,EM-E,EOG]
L3B	EO-725954J	COIL SIF DET 6F16263A3 [EK-B]
L4A	EO-725956J	COIL AFT 6F16262A1 [EOH-E,EM-E,EOG]
L4B	EO-725958J	COIL AFT 6F16262A3 [EK-B] [427/467]
L4C	EO-714614	COIL RF 6F16115B1 [EK-B] [485]
L5A	EO-725960J	COIL TANK 6F16259A1 [EOH-E,EM-E,EOG]
L5B	EO-725962J	COIL TANK 6F16259A3 [EK-B] [427/467]
L5C	EO-714610	COIL RF 6F16113B1 [EK-B] [485]
L6A	EO-387799J	COIL FIX 1 EL0405SKI 180K [EXCXPT 427/467EK]
L6B	EO-387798J	COIL FIX 1 EL0405SKI 150K [EK-B] [427/467]
L7A	EO-387799J	COIL FIX 1 EL0405SKI 180K [EOH-E,EOG,EM-E]
L7B	EO-387798J	COIL FIX 1 EL0405SKI 150K [EK-B] [427/467]
L7C	EO-387781J	COIL FIX 1 EL0405SKI 120K [EK-B] [485]
L8	EO-387802J	COIL FIX 1 EL0405SKI 330K [EXCEPT 485EK]
L9	EO-714610	COIL RF 6F16113B1 [EK-B] [485]
L10	EO-387781J	COIL FIX 1 EL0405SKI 120K [EK-B] [485]
L51	EO-725964J	COIL TRAP 6F16222A1 [EOG]
L52	EO-725965J	COIL TRAP 6F16223A1 [EOG]
L53	EO-391141J	COIL FIX 1 EL0405SKI R47M [EOG]
Q1	ET-725820J	TR CHIP 2SC2735J
Q2	ET-713614	TR CHIP 2SA1235 E,F [EXCEPT 485EK]
Q4	ET-713614	TR CHIP 2SA1235 E,F [EK-B] [485]
Q5	ET-713615	TR CHIP 2SC3052 E,F [EK-B] [485]
Q7	ET-713614	TR CHIP 2SA1235 E,F [EK-B] [485]
Q51	ET-724885J	TR CHIP RT1N141C [EOG]
Q52	ET-724885J	TR CHIP RT1N141C [EOG]
VR1	EV-725966J	R S-FIX V RVF6W01 203K [EOH-E,EM-E,EK-B]
VR2	EV-388163J	R S-FIX V RVF6W01 0.10W 202 [EXCEPT 485EK]
VR3	EV-388163J	R S-FIX V RVF6W01 0.10W 202 [EK-B] [485]
VR51	EV-725966J	R S-FIX V RVF6W01 203K [EOG]
VR52	EV-725966J	R S-FIX V RVF6W01 203K [EOG]

12. POWER SUPPLY P.C BOARD (EXCEPT EM)

Ref. No.	Part No.	Description
C1	*EC-389414J	C CE V DE7 B102K 400AC
C2	EC-363490	C EC V CUT SME 222M 16.0DC
C3	EC-364958	C EC V CUT SME 222M 35.0DC
D1	*ED-511907	D SILICON 1N4002 100/1.0A
D2	*ED-511907	D SILICON 1N4002 100/1.0A
D3	*ED-511907	D SILICON 1N4002 100/1.0A
D4	*ED-511907	D SILICON 1N4002 100/1.0A
D5	ED-624903	D SILICON H 1S2473
D8	ED-322046	D ZENER H HZ18 1
D10	ED-343996	D ZENER H HZ12 B1
FR1	*ER-392819J	R FUSE H S10 RF25SC 1/4WR 10K
FR3	*ER-391044J	R FUSE H S10 RF25SC 1/6WR 68K
FR4	*ER-392807J	R FUSE H S10 RF25SC 1/6WR 12K
L1	EO-389410J	COIL LF RR03R212A10 10.0UH [EOG]
L2	EO-389410J	COIL LF RR03R212A10 10.0UH [EOG]
R6	ER-389875J	R OMF H S10 FS 1/2W R68J
TR1	ET-373025	TR 2SD1944 J1,J2,K
TR2	ET-360137	TR 2SC3330 U,V F05
TR3	ET-391025J	TR 2SD2012
TR4	ET-391025J	TR 2SD2012
TR5	ET-380685J	TR 2SD1761 E,F,G
T1A	*BT-391109J	TRANS POW V1105 EO [EOH-E,EOG]
T1B	*BT-389239J	TRANS POW V1102 EK [EK-B]

13. DIODE P.C BOARD (EXCEPT EM)

Ref. No.	Part No.	Description
D9	*ED-389296J	D SILICON BR31-B-D-80 100/3.0A

14. POWER SUPPLY (1) P.C BOARD(EM ONLY)

Ref. No.	Part No.	Description
C1	EC-363491	C EC V CUT SME 222M 25.0DC
C2	EC-364958	C EC V CUT SME 222M 35.0DC
C104	*EC-378327	C EC V SM 2R2M 450DC
D1	*ED-511907	D SILICON 1N4002 100/1.0A
D2	*ED-511907	D SILICON 1N4002 100/1.0A
D3	*ED-511907	D SILICON 1N4002 100/1.0A
D4	*ED-511907	D SILICON 1N4002 100/1.0A
D5	*ED-511907	D SILICON 1N4002 100/1.0A
D6	*ED-511907	D SILICON 1N4002 100/1.0A
D7	*ED-511907	D SILICON 1N4002 100/1.0A
D8	*ED-511907	D SILICON 1N4002 100/1.0A
D9	ED-346618	D ZENER H HZ15 1
D10	ED-380089J	D SILICON DFC15TC-FD1 200/1.5A
D11	ED-307572	D SILICON H 1SS131
D12	ED-386226J	D SCHOTTKY RB100AT-32T26 40/1
D13	ED-346541	D ZENER H HZ9B2L
D14	ED-346541	D ZENER H HZ9B2L
D103	ED-346526	D ZENER H HZ6B1L
D104	ED-624903	D SILICON H 1S2473
D105	ED-346526	D ZENER H HZ6B1L
FR2	*ER-391043J	R FUSE H S10 RF25SC 1/6W R47K
FR3	*ER-391043J	R FUSE H S10 RF25SC 1/6W R47K
FR4	*ER-391043J	R FUSE H S10 RF25SC 1/6W R47K
FR6	*ER-392807J	R FUSE H S10 RF25SC 1/6W R12K
FR7	*ER-392819J	R FUSE H S10 RF25SC 1/4W R10K
IC1	EI-380090J	IC NJM2352D
IC102	*EI-368152	IC BA707
L1	EO-392805J	COIL FIX 2 C-5327-01 240K
L2	EO-392[illegible]	COIL FIX 2 C-5327-01 240K
L3	EO-382[illegible]	COIL FIX 2 EF1950 560K
L4	EO-3928[illegible]	COIL FIX 2 C-5328-01 560K
L5	EO-39280[illegible]	COIL FIX 2 C-5328-01 560K
L6	EO-382264T	COIL FIX 2 EF1950 560K
R16	ER-389875J	R OMF H S10 FS 1/2W R68J
R108	ER-376864	R OMF H S12 SPR1 1W 274J
TR1	ET-380685J	TR 2SD1761 E,F,G
TR2	ET-366365	TR 2SB1185 E,F
TR3	ET-391025J	TR 2SD2012
TR4	ET-353899	TR 2SA1317 S,T,U
TR6	ET-360646	TR DTA143ES
TR7	ET-356817	TR 2SB891 Q,R
TR8	ET-354364	TR DTC143TS
TR9	ET-391025J	TR 2SD2012
TR11	ET-360137	TR 2SC3330 U,V F05
TR101	*ET-389415J	TR 2SC3169
TR102	ET-360137	TR 2SC3330 U,V F05
TR103	*ET-389415J	TR 2SC3169
T1	*BT-389240J	TRANS POW V1105-EM

15. POWER SUPPLY (2) P.C BOARD(EM ONLY)

Ref. No.	Part No.	Description
C101	*EC-389414J	C CE V DE7 B102K 400AC
D101	*ED-385935J	D SILICON ERA22-04V3 T26 400/5
D102	ED-624903	D SILICON H 1S2473
D106	ED-385935J	D SILICON ERA22-04V3 T26 400/5
D107	*ED-378455	D SILICON DSA12TG 600/1.2A
D108	*ED-385935J	D SILICON ERA22-04V3 T26 400/5
F101	*EF-601942	FUSE SEMKO T 250V 630MA
IC101	*EI-376794J1	IC BA10393
RL101	*EQ-389298J	RELAY POW AJV12442 1NO 100V

16. TR P.C BOARD (EM ONLY)

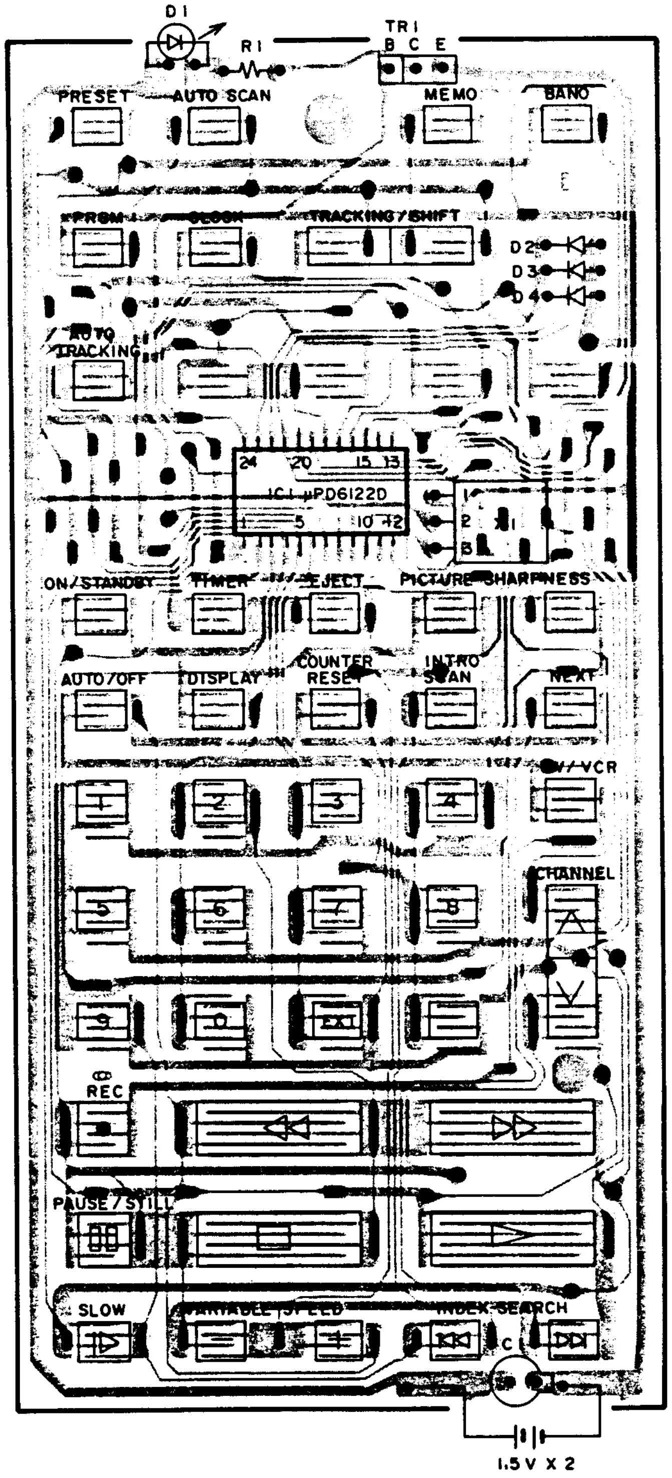
Ref. No.	Part No.	Description
TR10	ET-373025	TR 2SD1944 J1,J2,K

17. JUNCTION P.C BOARD

Ref. No.	Part No.	Description
D1	ED-391103J	D ZENER H HZS12B2
TR1	ET-380685J	TR 2SD1761 E,F,G

18. P/S AUTO P.C BOARD (EM/EOG ONLY)

Ref. No.	Part No.	Description
D101	ED-307572	D SILICON H 1SS131
D102	ED-307572	D SILICON H 1SS131
IC101	EI-388342J	IC LA7311
L101	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
TR101	ET-360137	TR 2SC3330 U,V F05
TR102	ET-353897	TR DTC114ES
TR103	ET-356336	TR DTA114ES
TR104	ET-360137	TR 2SC3330 U,V F05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BAND
PROG
CLOCK
TRACKING/SHIFT
D2
D3
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AUTO TRACKING
24
20
15
13
IC1 μPD6122D
1
5
10
12
1
2
3
ON/STANDBY
TIMER
EJECT
PICTURE SHARPNESS
AUTO/OFF
DISPLAY
COUNTER RESET
INTRO SCAN
NEXT
TV/VCR
1
2
3
4
5
6
7
8
CHANNEL
9
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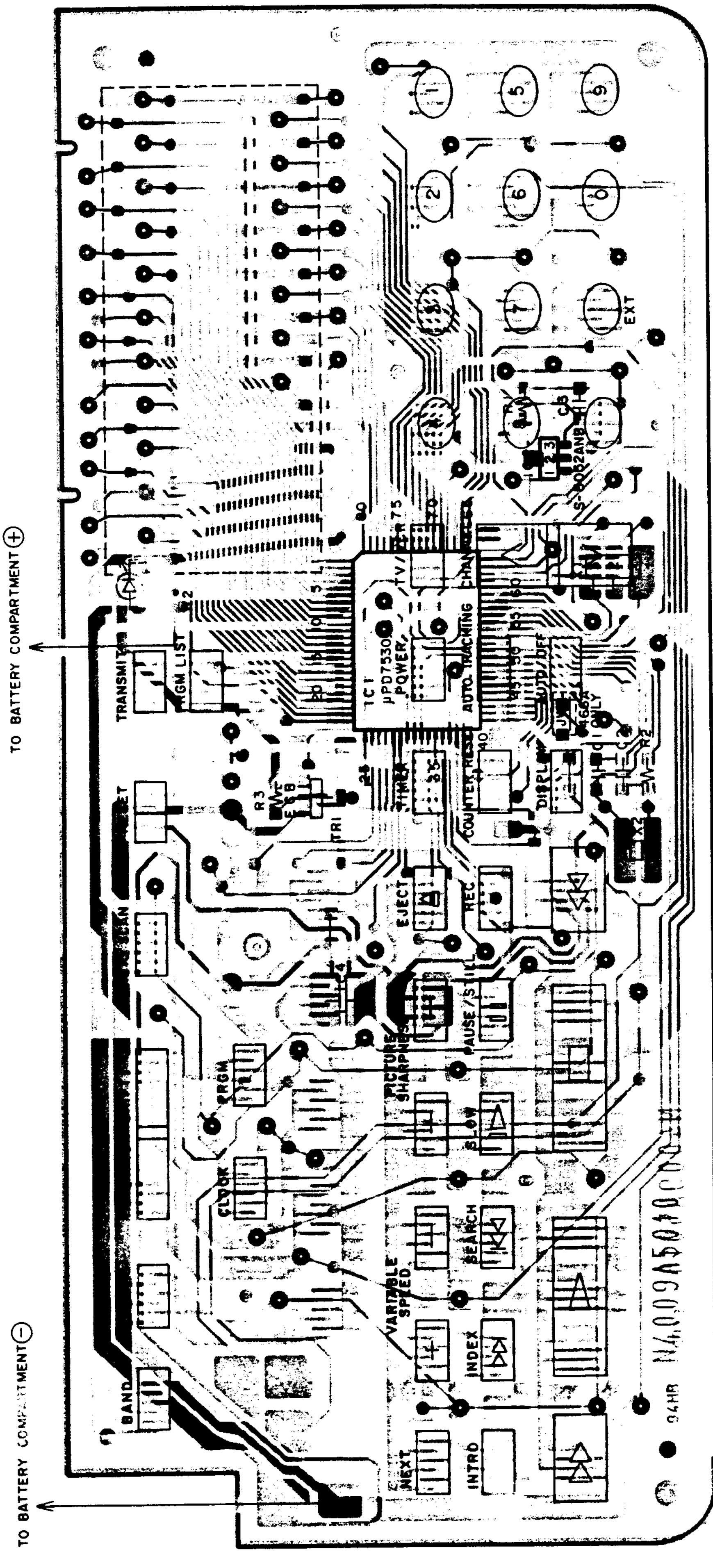
REC
PAUSE/STILL
SLOW
VARIABLE SPEED
INDEX SEARCH
C1
1.5 V X 2

REMO–CON PCB **N4008C5010**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TO BATTERY COMPARTMENT ⊖
TRANSMIT
PGM LIST
IC1
µPD7530
POWER
AUTO. TRACKING
TV/VTR
CHANNEL
TIMER
COUNTER RESET
DISPLAY
AUTO OFF
EJECT
REC
PAUSE/STILL
PICTURE SHARPNESS
PRGM
CLOCK
SLOW
SEARCH
VARIABLE SPEED
INDEX
NEXT
INTRO
BAND
EXT
R3
TR1
R2
X2
C3
1
2
3
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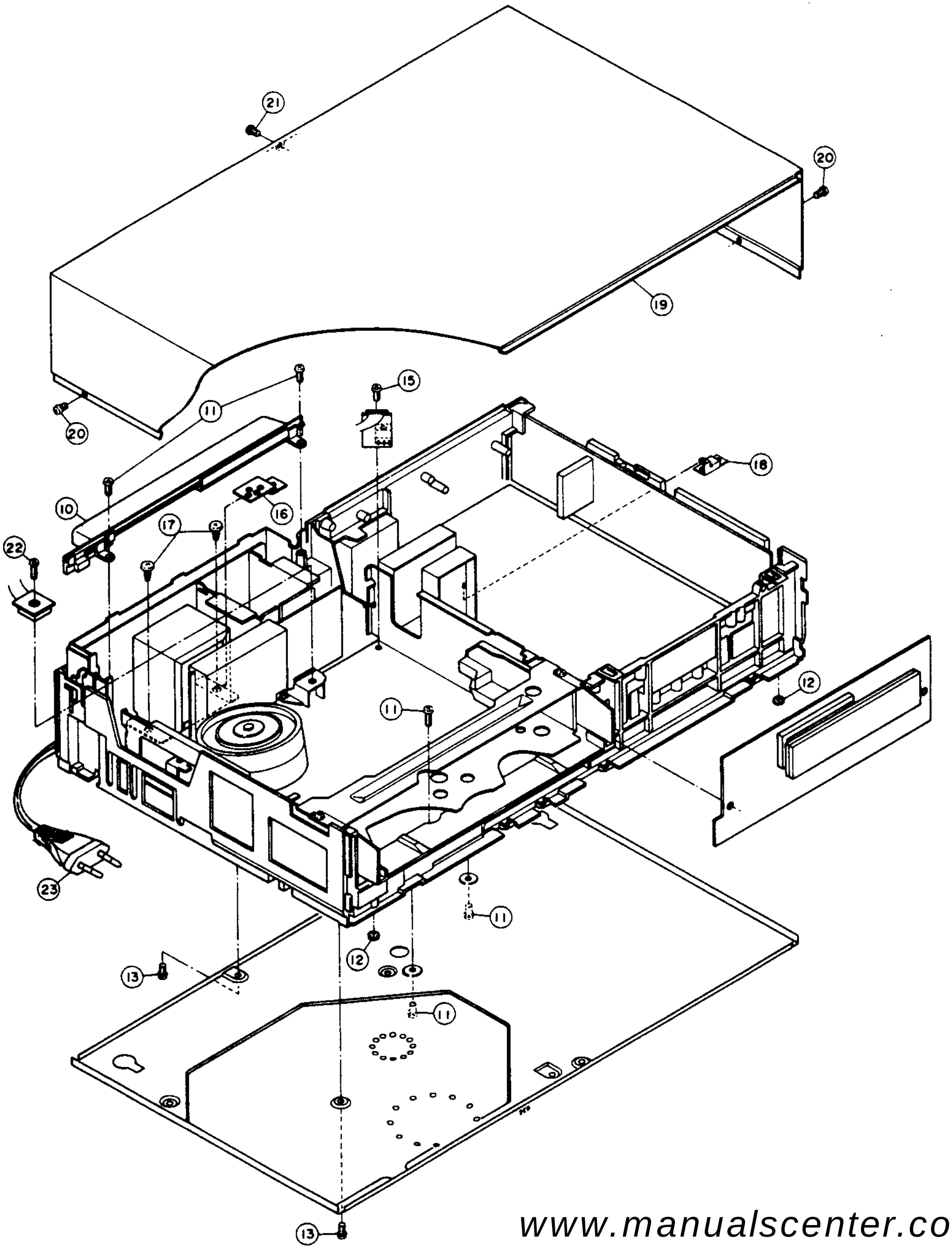
94HB

REMO-CON PCB N4009A5010

FINAL ASSEMBLY BLOCK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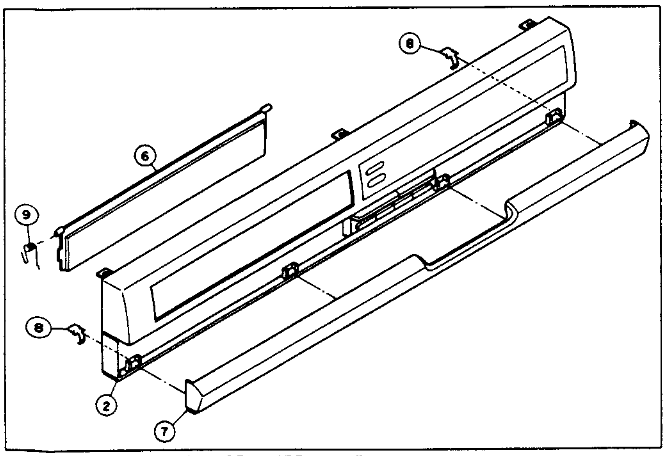
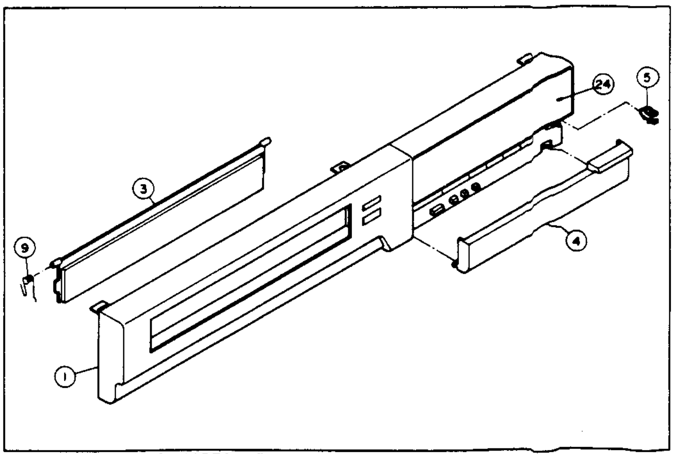
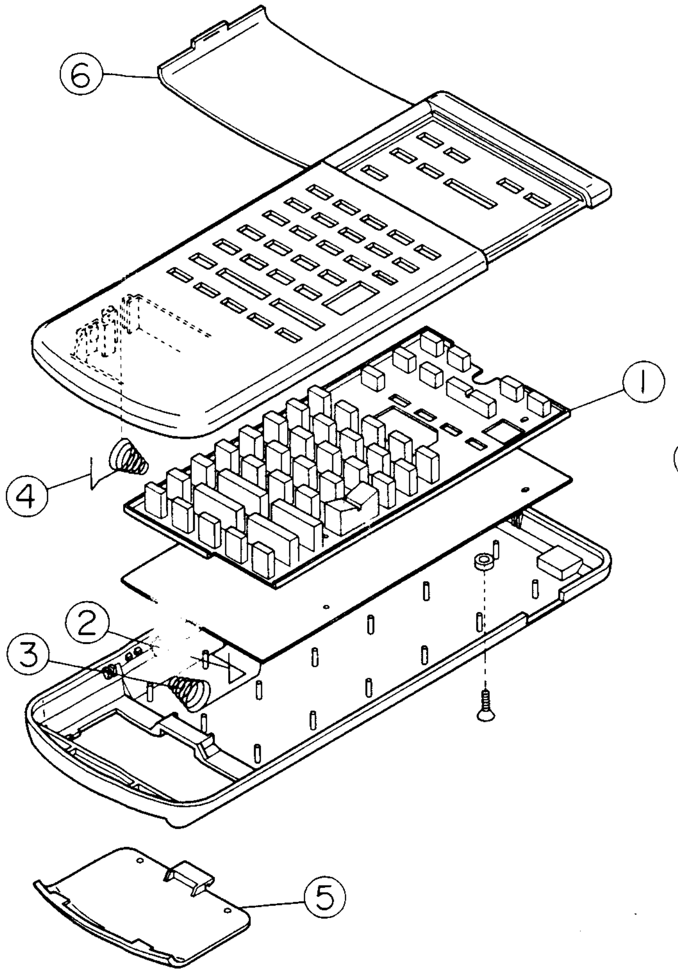


VS-422EOH, VS-427EK·467EK·485EK

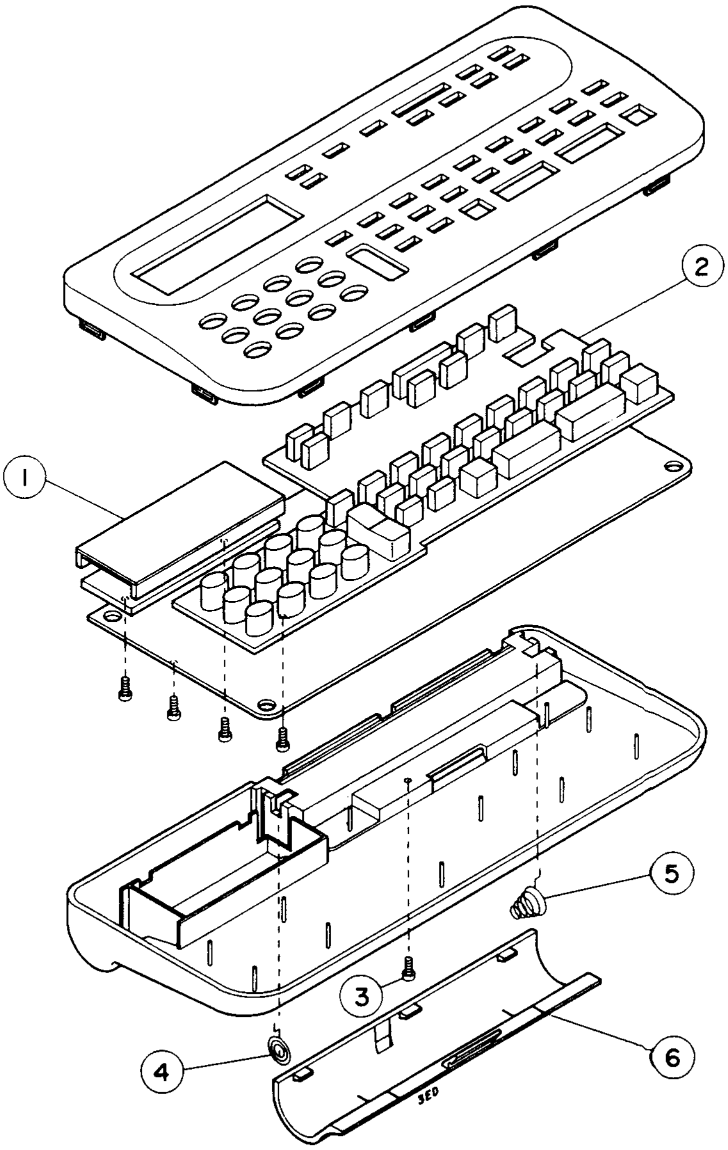


VS-425EOH·EOG·EM

REMOCON UNIT RC-V425A-EB/V426A-EB



REMOCON UNIT RC-V466A-EB



25. ACCESSARY

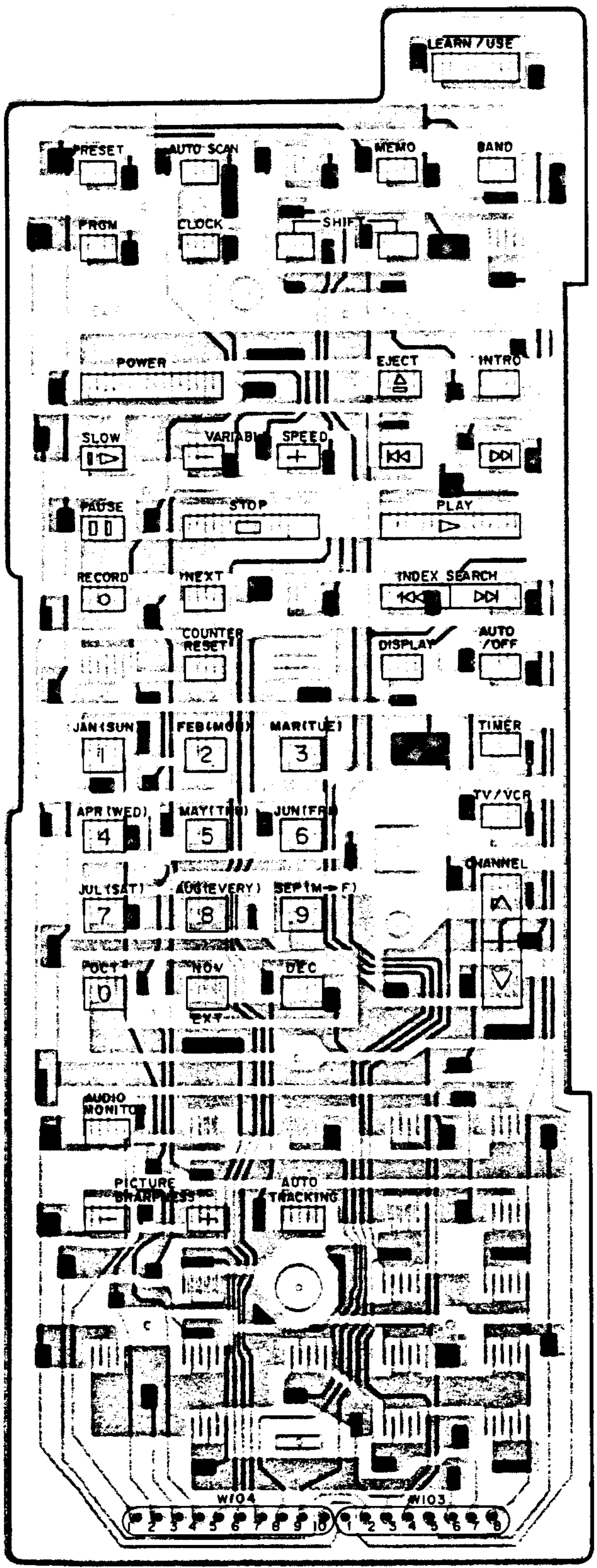
Ref. No.	Part No.	Description
1	EW-348414	CORD PAL
2A	AV-N4008B010A	REMOCON BLK RC-V425A-EB [EOH-E] [422]
2B	AV-N4008B010C	REMOCON BLK RC-V426A-EB [EM-E]
2C	AV-N4009B010C	REMOCON BLK RC-V466A-EB [EOH-E,EOG] [425]
2D	AV-N4011B010B	REMOCON BLK RC-V468A-EB [EK-B]

26. REMOCON UNIT RC-V425A-EB/V426A-EB

Ref. No.	Part No.	Description
D1	ED-390686J	D LED TLN105B INFRARED
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
IC1	EI-376112	IC UPD6122G
TR1	ET-302502	TR 2SC2001 K
X1	EI-390687J	OSC CE CSU455PL 455KHZ
1	MB-390673J	KEY RUBBER(N)
2	ZG-390683J	TERMINAL BATTERY(A)
3	ZG-390684J	TERMINAL BATTERY(B)
4	ZG-390676J	TERMINAL BATTERY(C)
5	SC-390678J	COVER BATTERY(N)
6	SP-390681J	DOOR PANEL(N)

27. REMOCON UNIT RC-V466A-EB

Ref. No.	Part No.	Description
D1	ED-390686J	D LED TLN105B INFRARED
IC1	EI-390822J	IC UPD75304G-057-3B9 SXREMA1
IC2	EI-390825J	IC S-8052ANB-NE T1
TR1	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
X1	EI-389972J	OSC CE W/C FCR2.2MC3 2.2MHZ
X2	EI-368825	OSC X'TAL MX-38T 32.768KHZ
1	EM-390786J	IND LCD LF5293G ENGLISH
2	MB-391417J	KEY RUBBER(A)
3	ZS-374389	PT BID20X06STL BNI
4	ZG-385136J	TERMINAL BATTERY B
5	ZG-391411J	TERMINAL BATTERY(1)
6	SC-391422J	COVER BATTERY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BAND
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POWER
EJECT
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VARIABLE
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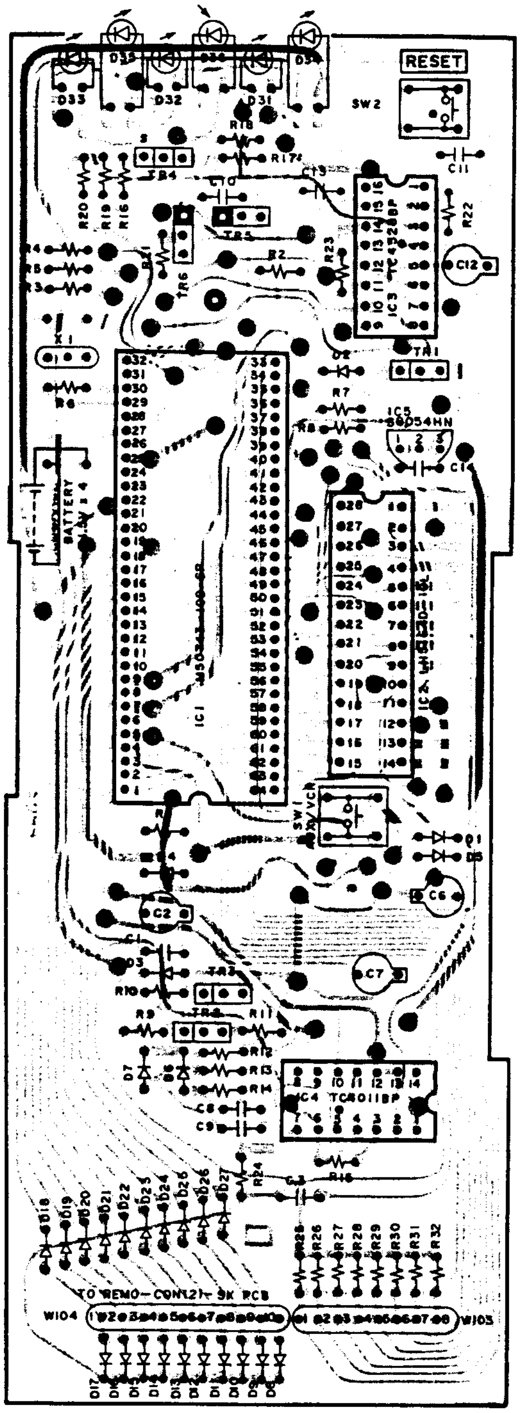
PAUSE
STOP
PLAY
RECORD
NEXT
INDEX SEARCH
COUNTER RESET
DISPLAY
AUTO /OFF
JAN(SUN)
FEB(MON)
MAR(TUE)
TIMER
APR(WED)
MAY(THU)
JUN(FRI)
TV/VCR
JUL(SAT)
AUG(EVERY)
SEP(M→F)
CHANNEL
OCT
NOV
DEC
EXT
AUDIO MONITOR
PICTURE SHARPNESS
AUTO TRACKING
W104
W103

REMO-CON(2)-SX PCB N4011B5020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D32
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D34
D35
D36
R18
R17
TR4
TR5
TR6
C10
C11
C12
C13
R20
R19
R16
R21
R22
R23
R2
R4
R5
R3
X1
R6
IC3
TC4520BP
TR1
D2
R7
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C2
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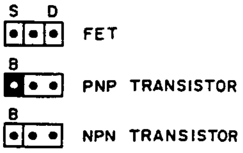
R29
R30
R31
R32
TO REMO-CON(2)-SX PCB
W104
W103
D17
D16
D15
D14
D13
D12
D11
D10
D9
D8

REMO-CON(1)PCB
N4004B5010(J2)


S
D
FET
B
PNP TRANSISTOR
B
NPN TRANSISTOR

19. LINEAR STEREO(A) P.C BOARD(EK ONLY)

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131 [485]
D4	ED-307572	D SILICON H 1SS131 [485]
D5	ED-307572	D SILICON H 1SS131 [485]
D6	ED-307572	D SILICON H 1SS131 [485]
D7	ED-307572	D SILICON H 1SS131 [485]
D8	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D17	ED-307572	D SILICON H 1SS131
D18	ED-307572	D SILICON H 1SS131
D19	ED-307572	D SILICON H 1SS131
D20	ED-307572	D SILICON H 1SS131
D22	ED-307572	D SILICON H 1SS131
D23	ED-307572	D SILICON H 1SS131
D24	ED-307572	D SILICON H 1SS131
FL1	EO-389983J	COIL TUN1 79-5297-12 15.625KHZ
FL2	EO-389982J	COIL TUN 1 79-5298-12 70.00KHZ
FL3	EO-389983J	COIL TUN1 79-5297-12 15.625KHZ
FL4	EO-389982J	COIL TUN 1 79-5298-12 70.00KHZ
IC1	EI-310036	IC TC4066BP
IC2	EI-310036	IC TC4066BP
IC3	EI-388360J	IC BA7765AS
IC4	EI-388360J	IC BA7765AS
IC5	EI-389322J	IC CXA1101P
IC6	EI-332259	IC TC4052BP
IC7	EI-200573	IC TC4053BP
L1	EO-390717J	COIL FIX 1 LHL06TB T05 103J
L2	EO-390717J	COIL FIX 1 LHL06TB T05 103J
L4	EO-393202J	COIL FIX 1 LHL06NB F05 472J
L5	EO-393202J	COIL FIX 1 LHL06NB F05 472J
L6	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
L7	EO-354600	COIL FIX 1 LAP02 F05 101K
OSC1	EO-391143J	COIL OSC 1 V1110-N 70.0KHZ
TR1	ET-360137	TR 2SC3330 U,V F05 [485]
TR2	ET-388338J	TR 2SB1425 S,E
TR3	ET-360137	TR 2SC3330 U,V F05 [485]
TR4	ET-354414	TR DTC144ES
TR5	ET-356336	TR DTA114ES
TR6	ET-357162	TR FET 2SJ74 GR,BL,V
TR7	ET-357162	TR FET 2SJ74 GR,BL,V
TR8	ET-354415	TR DTA144ES [485]
TR9	ET-354415	TR DTA144ES
TR10	ET-354415	TR DTA144ES
TR11	ET-360137	TR 2SC3330 U,V F05
TR12	ET-353899	TR 2SA1317 S,T,U
TR13	ET-353899	TR 2SA1317 S,T,U [485]
TR14	ET-353899	TR 2SA1317 S,T,U
TR15	ET-353899	TR 2SA1317 S,T,U
TR16	ET-360137	TR 2SC3330 U,V F05
TR17	ET-360137	TR 2SC3330 U,V F05
TR18	ET-360137	TR 2SC3330 U,V F05
TR19	ET-360137	TR 2SC3330 U,V F05
TR20	ET-360137	TR 2SC3330 U,V F05 [485]
TR21	ET-353899	TR 2SA1317 S,T,U
TR22	ET-353899	TR 2SA1317 S,T,U
TR23	ET-360137	TR 2SC3330 U,V F05
TR24	ET-370310	TR DTC144TS
TR25	ET-370310	TR DTC144TS
TR26	ET-356336	TR DTA114ES
VR2	EV-362128	R S-FIX H RH0615C 0.10W 152
VR3	EV-356582	R S-FIX H RH0615C 0.10W 473
VR4	EV-358860	R S-FIX H RH0615C 0.10W 101
VR5	EV-362128	R S-FIX H RH0615C 0.10W 152
VR6	EV-356582	R S-FIX H RH0615C 0.10W 473

20. LINEAR STEREO(B) P.C BOARD(EK ONLY)

Ref. No.	Part No.	Description
D60	ED-389422J	D LED PG3432SY [485]
D70	ED-389422J	D LED PG3432SY
D80	ED-389422J	D LED PG3432SY

21. REAR PINJUCK P.C BOARD (EK ONLY)

Ref. No.	Part No.	Description
J1	EJ-389914J	PIN J YKB11-0177 YELLOW 1P
J2	EJ-389979J	PIN J YKB11-0175 RED 1P
J3	EJ-389980J	PIN J YKB11-0176 WHITE 1P
J4	EJ-389864J	SOCKET M1817 21P

22. NICAM UNIT (485EK ONLY)

Ref. No.	Part No.	Description
C16	EV-729779J	C S-FIX H TZ03T200FR
C46	EV-729779J	C S-FIX H TZ03T200FR
D2	ED-730114J	D VARACTOR 1SV111A
D3	ED-730115J	D SILICON CHIP MC2836
D4	ED-724694J	D SILICON CHIP MC2838
D5	ED-730115J	D SILICON CHIP MC2836
IC2	EI-382827J	IC TA8662N
IC3	EI-730116J	IC CF70123C
IC4	EI-730117J	IC SAA7320GP
IC5	EI-349719	IC M5218P
IC6	EI-356049	IC TC74HC139P
IC7	EI-332259	IC TC4052BP
IC8	EI-365957	IC M5278L05
L1	EO-714055	COIL RF EL0606RA-101K
L2	EO-351184	COIL FIX 1 EL0606SKI 821J
L3	EO-351184	COIL FIX 1 EL0606SKI 821J
L4	EO-714055	COIL RF EL0606RA-101K
L5	EO-714055	COIL RF EL0606RA-101K
L6	EO-714055	COIL RF EL0606RA-101K
L7	EO-714055	COIL RF EL0606RA-101K
L8	EO-714055	COIL RF EL0606RA-101K
L11	EH-382829J	FILTER LC BP TH316BQM-2110QDAF
Q5	ET-713615	TR CHIP 2SC3052 E,F
Q6	ET-713615	TR CHIP 2SC3052 E,F
Q7	ET-713615	TR CHIP 2SC3052 E,F
Q8	ET-713615	TR CHIP 2SC3052 E,F
Q9	ET-730111J	TR CHIP DTC124EK
Q10	ET-730111J	TR CHIP DTC124EK
Q11	ET-716958	TR CHIP DTC144EK
Q12	ET-713615	TR CHIP 2SC3052 E,F
Q13	ET-713615	TR CHIP 2SC3052 E,F
X1	EI-382831J	OSC X'TAL NR-18 6.552MHZ
X2	EI-382833J	OSC X'TAL NR-18 5.824MHZ
X3	EI-730420J	OSC X,TAL NR-18 16.384MHZ

23. VPS P.C BOARD (EOG ONLY)

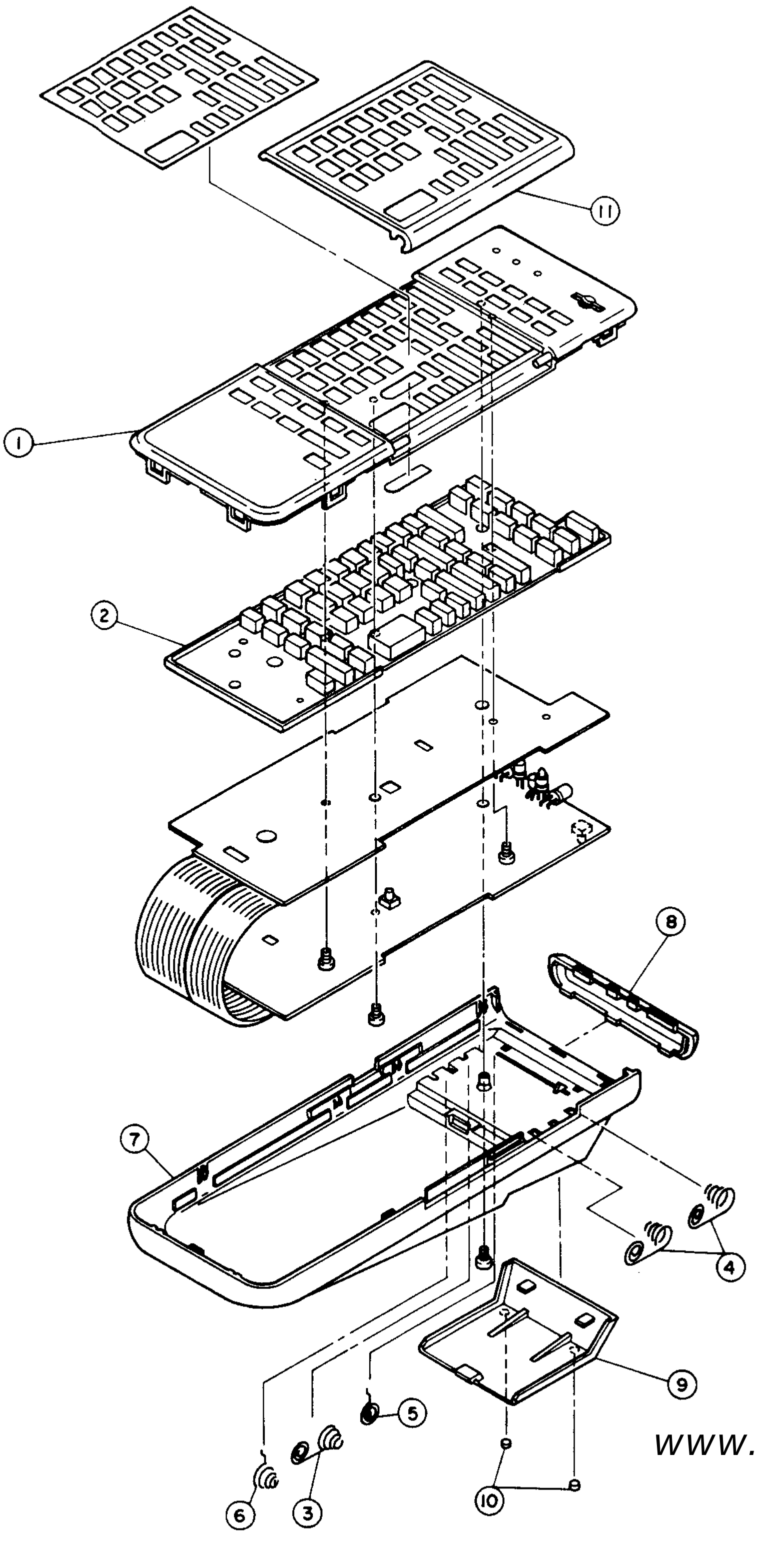
Ref. No.	Part No.	Description
D101	ED-307572	D SILICON H 1SS131
IB101	EH-383056J	COMP R RGLE4X 103J
IC1	EI-390147J	IC MB88505H-1097M SXVPS1
IC101	EI-385958J	IC SAA4700
L101	EO-376179	COIL FIX 1 ALF-7.5F F05 101K
TR101	ET-360137	TR 2SC3330 U,V F05
X1	EI-388110J	OSC CE CST4.19MG 4.194MHZ

24. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1A	BD-389782J	PANEL FRONT-425EOH-B PART [EOH-E] [425]
1B	BD-389390J	PANEL FRONT-425EOG-B PART [EOG]
1C	BD-389781J	PANEL FRONT-425EM-B PART [EM-E]
2A	BD-391016J	PANEL FRONT-422EOH PART [EOH-E] [422]
2B	BD-391019J	PANEL FRONT-427EK PART [EK-B] [427]
2C	BD-391020J	PANEL FRONT-467EK PART [EK-B] [467]
2D	BD-391021J	PANEL FRONT-485EK PART [EK-B] [485]
3A	SE-389741J	MASK CASSETTE(D)-E2 [EOH-E] [425]
3B	SE-389841J	MASK CASSETTE(D)-G3 [EOG]
3C	SE-387368J	MASK CASSETTE(D)-E1 [EM-E]
4A	SP-389743J	DOOR FRONT(D)-E2 [EOH-E,EM-E] [425]
4B	SP-389342J	DOOR FRONT(D) G1 [EOG]
5	SZ-390032J	LATCH DOOR 3550-1 [EOH-E,EOG,EM-E] [425]
6A	SE-391793J	MASK CASSETTE(A)E2 [EOH-E] [422]
6B	SE-391795J	MASK CASSETTE(A)E4 [EK-B] [427]
6C	SE-392574J	MASK CASSETTE(A)E10 [EK-B] [467]
6D	SE-392575J	MASK CASSETTE(A)E11 [EK-B] [485]
7A	SP-387384J	DOOR(B)E1-B [EOH-E] [422]
7B	SP-391560J	DOOR(B)E2-B [EK-B]
8	ZG-386833J1	SP PLATE DOOR(D) [EOH,EK][422/427/467/485]
9	ZG-387370J	SP MASK
10	SC-387353J	COVER TRANS
11	ZS-362378	PLX BID30X10STL CMT
12	SA-387507J	FOOT SX
13	ZS-364543	DT BID30X06STL CMT
15	ZS-378341	PLX BID30X12STL CMT
16	ZG-387505J	PLATE EARTH
17	ZS-373962	PLX BID40X10STL CMT
18	ZG-387354J	PLATE EARTH(2)
19	SP-387386J1	COVER UPPER B
20	ZS-385611J	DT BID26X06STL BNI
21	ZS-389965J	PLX BID26X08STL BNI
22	ZS-357946	PLX PAN30X10STL CMT C080
23A	EW-385900M	AC CORD 200 SE-1H03VV B130 A E [EOH-E,EOG,EM-E]
23B	EW-389300J	AC CORD200 NRASBS LC2 B140 A B [EK-B]
24	SE-389723J	WINDOW FLD(D)-425EM [EM-E]

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

REMOCON UNIT RC-V468A-EB



28. REMOCON UNIT RC-V468A-EB

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131
D6	ED-307572	D SILICON H 1SS131
D7	ED-307572	D SILICON H 1SS131
D8	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D10	ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131
D16	ED-307572	D SILICON H 1SS131
D17	ED-307572	D SILICON H 1SS131
D18	ED-307572	D SILICON H 1SS131
D19	ED-307572	D SILICON H 1SS131
D20	ED-307572	D SILICON H 1SS131
D21	ED-307572	D SILICON H 1SS131
D22	ED-307572	D SILICON H 1SS131
D23	ED-307572	D SILICON H 1SS131
D24	ED-307572	D SILICON H 1SS131
D25	ED-307572	D SILICON H 1SS131
D26	ED-307572	D SILICON H 1SS131
D27	ED-307572	D SILICON H 1SS131
D31	ED-384424J	D LED PR2533D RED
D32	ED-384424J	D LED PR2533D RED
D33	ED-384424J	D LED PR2533D RED
D34	ED-376111	D LED SE303AC INFRARED
D35	ED-376111	D LED SE303AC INFRARED
D36	ED-360409	D PHOTO PN323B
IC1	EI-391695J	IC M50743-109SP SXUNI1
IC2	EI-389184J	IC LH5164D-10L
IC3	EI-332203	IC TC4528BP
IC4	EI-304657	IC TC4011BP
IC5	EI-360396	IC S-8054HN
SW1	ES-385174J	SW TACT SKHHBV
SW2	ES-385174J	SW TACT SKHHBV
TR1	ET-354414	TR DTC144ES
TR2	ET-308141	TR 2SC2603 G F05
TR3	ET-302502	TR 2SC2001 K
TR4	ET-337759	TR FET 2SK246 GR
TR5	ET-308472	TR 2SA1115 E,F,G F05
TR6	ET-356336	TR DTA114ES
X1	EI-372031	OSC CE W/C FCR8.0MC 8.0MHZ
1	SC-391675J	CASE UPPER(U)-E
2	MB-391678J	KEY RUBBER(B)
3	ZG-384485J	TERMINAL BATTERY A(R)
4	ZG-385135J	TERMINAL BATTERY A(L)
5	ZG-385136J	TERMINAL BATTERY B
6	ZG-385138J	TERMINAL BATTERY C
7	SC-384435J	CASE BOTTOM
8	SE-384446J	FILTER
9	SC-384444J	COVER BATTERY
10	SA-384484J	FOOT RUBBER
11	SP-384447J1	DOOR PANEL

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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AV-N4008B010A	25-2A	EC-363491	14-C1	ED-307572	19-D5	ED-387763J	6-D409
AV-N4008B010C	25-2B	EC-364958	12-C3	ED-307572	19-D6	ED-387765J	10-D2
AV-N4009B010C	25-2C	EC-364958	14-C2	ED-307572	19-D7	ED-387766J	6-D1
AV-N4011B010B	25-2D	EC-378327	14-C104	ED-307572	19-D8	ED-387919J	6-D424
BA-389398J	5-7	EC-389414J	12-C1	ED-307572	19-D9	ED-388359J	6-D207
BA-N4009A020C	5-8	EC-389414J	15-C101	ED-307572	19-D11	ED-388368J	6-D41
BA-V1102A500G	5-2B	EC-391843J	6-C480	ED-307572	19-D12	ED-388368J	6-D410
BA-V1102A510A	5-2C	ED-307572	1-28	ED-307572	19-D13	ED-388387J	6-D422
BA-V1102A600G	5-1D	ED-307572	6-D3	ED-307572	19-D14	ED-389296J	1-24
BA-V1102A600M	5-1F	ED-307572	6-D4	ED-307572	19-D17	ED-389296J	13-D9
BA-V1102A605E	5-1B	ED-307572	6-D10	ED-307572	19-D18	ED-389418J	6-D203
BA-V1102A610A	5-4A	ED-307572	6-D11	ED-307572	19-D19	ED-389422J	20-D60
BA-V1102A620A	5-4B	ED-307572	6-D21	ED-307572	19-D20	ED-389422J	20-D70
BA-V1102A630B	5-3D	ED-307572	6-D22	ED-307572	19-D22	ED-389422J	20-D80
BA-V1102A630E	5-3B	ED-307572	6-D40	ED-307572	19-D23	ED-389688J	6-D418
BA-V1102A670A	5-5	ED-307572	6-D91	ED-307572	D24	ED-389840J	6-D206
BA-V1102D500C	5-2A	ED-307572	6-D101	ED-307572	-D101	ED-390011J	1-20
BA-V1102D500F	5-2D	ED-307572	6-D102	ED-307572	26-D2	ED-390011J	4-13
BA-V1102D600C	5-1E	ED-307572	6-D103	ED-307572	26-D3	ED-390012J	1-21
BA-V1102D600D	5-1G	ED-307572	6-D106	ED-307572	26-D4	ED-390012J	4-14
BA-V1102D605A	5-1A	ED-307572	6-D107	ED-307572	28-D1	ED-390686J	1-22
BA-V1102D605B	5-1C	ED-307572	6-D211	ED-307572	28-D2	ED-390686J	26-D1
BA-V1102D630D	5-3C	ED-307572	6-D212	ED-307572	28-D3	ED-390686J	27-D1
BA-V1110A630D	5-3F	ED-307572	6-D302	ED-307572	28-D4	ED-391103J	1-31
BA-V1110D630B	5-3E	ED-307572	6-D306	ED-307572	28-D5	ED-391103J	17-D1
BA-V1110D630C	5-3G	ED-307572	6-D402	ED-307572	28-D6	ED-392779J	7-D604
BA-V1110D630F	5-3A	ED-307572	6-D403	ED-307572	28-D7	ED-511907	1-30
BA-V1110D680A	5-6A	ED-307572	6-D404	ED-307572	28-D8	ED-511907	12-D1
BA-V1110D680B	5-6B	ED-307572	6-D408	ED-307572	28-D9	ED-511907	12-D2
BB-V1102A020A	1-1	ED-307572	6-D411	ED-307572	28-D10	ED-511907	12-D3
BB-V1102A020A	3-60A	ED-307572	6-D412	ED-307572	28-D11	ED-511907	12-D4
BB-V1102A020C	1-2	ED-307572	6-D413	ED-307572	28-D12	ED-511907	14-D1
BB-V1102A020C	3-60B	ED-307572	6-D414	ED-307572	28-D13	ED-511907	14-D2
BD-389390J	24-1B	ED-307572	6-D419	ED-307572	28-D14	ED-511907	14-D3
BD-389781J	24-1C	ED-307572	6-D420	ED-307572	28-D15	ED-511907	14-D4
BD-389782J	24-1A	ED-307572	6-D421	ED-307572	28-D16	ED-511907	14-D5
BD-391016J	24-2A	ED-307572	6-D423	ED-307572	28-D17	ED-511907	14-D6
BD-391019J	24-2B	ED-307572	6-D425	ED-307572	28-D18	ED-511907	14-D7
BD-391020J	24-2C	ED-307572	6-D481	ED-307572	28-D19	ED-511907	14-D8
BD-391021J	24-2D	ED-307572	7-D601	ED-307572	28-D20	ED-624903	1-29
BL-387458J1	1-4	ED-307572	7-D605	ED-307572	28-D21	ED-624903	6-D204
BL-387458J1	4-37	ED-307572	7-D675	ED-307572	28-D22	ED-624903	6-D301
BL-387501J	1-5	ED-307572	7-D701	ED-307572	28-D23	ED-624903	6-D405
BL-387501J	3-29	ED-307572	7-D702	ED-307572	28-D24	ED-624903	6-D406
BL-V1102A050A	1-6	ED-307572	8-D1	ED-307572	28-D25	ED-624903	12-D5
BL-V1102A050A	3-23	ED-307572	9-D1	ED-307572	28-D26	ED-624903	14-D104
BL-V1102A140A	1-3	ED-307572	9-D2	ED-307572	28-D27	ED-624903	15-D102
BL-V1102A140A	3-43	ED-307572	9-D3	ED-322046	1-34	ED-724694J	22-D4
BM-386236J	1-7	ED-307572	9-D5	ED-322046	12-D8	ED-730114J	22-D2
BM-386236J	4-9	ED-307572	9-D8	ED-343996	1-32	ED-730115J	22-D3
BM-387503J	1-8	ED-307572	9-D10	ED-343996	12-D10	ED-730115J	22-D5
BM-387503J	4-31	ED-307572	10-D1	ED-346417	6-D407	EE-387602J	6-1C
BM-M3225A020A	1-9	ED-307572	10-D3	ED-346526	1-35	EE-387604J	6-1B
BM-M3225A020A	2-8	ED-307572	10-D5	ED-346526	14-D103	EE-387607J	6-1D
BT-389239J	1-10	ED-307572	10-D6	ED-346526	14-D105	EE-390143J	6-1A
BT-389239J	12-T1B	ED-307572	10-D7	ED-346541	1-36	EF-601942	1-37
BT-389240J	1-12	ED-307572	10-D8	ED-346541	14-D13	EF-601942	15-F101
BT-389240J	14-T1	ED-307572	10-D9	ED-346541	14-D14	EH-364045	7-FL701
BT-391109J	1-11	ED-307572	10-D10	ED-346618	1-33	EH-368821	7-FL601
BT-391109J	12-T1A	ED-307572	10-D11	ED-346618	14-D9	EH-368948	11-CF3A
BV-387611J	6-2C	ED-307572	10-D12	ED-360409	28-D36	EH-373914	11-CF1A
BV-387635J	6-2B	ED-307572	10-D13	ED-366684	6-D416	EH-373917	11-CF1B
BV-390052J	6-2A	ED-307572	10-D14	ED-366684	6-D417	EH-373918	11-CF3B
BV-B373848	2-10	ED-307572	10-D15	ED-367502	6-D90	EH-373919	11-CF3C
BV-V1102A070A	1-14	ED-307572	10-D16	ED-376111	28-D34	EH-373921	11-CF2B
BV-V1102A070A	3-35	ED-307572	10-D18	ED-376111	28-D35	EH-378541J	10-IB4
BV-V1102A080A	1-15	ED-307572	10-D21	ED-378455	1-26	EH-382829J	22-L11
BV-V1102A080A	3-36	ED-307572	10-D24	ED-378455	15-D107	EH-383056J	23-IB101
BV-V1102A150A	1-13	ED-307572	10-D25	ED-380089J	1-25	EH-383083J	10-IB2
BV-V1102A150A	3-48	ED-307572	10-D26	ED-380089J	14-D10	EH-387619J	10-IB1
BV-V1102A410A	1-16	ED-307572	10-D27	ED-382620J	10-D4	EH-390730J	7-DL701
BV-V1102A410A	2-1A	ED-307572	10-D28	ED-384424J	28-D31	EH-392816J	7-FL602
BV-V1102A410B	1-17	ED-307572	10-D30	ED-384424J	28-D32	EH-714628	11-CF1D
BV-V1102A410B	2-1B	ED-307572	14-D11	ED-384424J	28-D33	EH-725826J	11-CF1C
BV-V1102A420A	1-18	ED-307572	18-D101	ED-385935J	1-27	EH-725827J	11-CF4
BV-V1102A420A	2-2A	ED-307572	18-D102	ED-385935J	15-D101	EH-725829J	11-CF2C
BV-V1102A420C	1-19	ED-307572	19-D1	ED-385935J	15-D106	EI-200573	19-IC7
BV-V1102A420C	2-2B	ED-307572	19-D2	ED-385935J	15-D108	EI-304657	28-IC4
EA-387496J	4-12	ED-307572	19-D3	ED-386226J	1-23	EI-310036	6-IC101
EC-363490	12-C2	ED-307572	19-D4	ED-386226J	14-D12	EI-310036	19-IC1

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
EI-310036	19-IC2	EJ-389914J	21-J1	EO-387802J	11-L8	ES-349474	10-SW14
EI-332203	28-IC3	EJ-389979J	21-J2	EO-388087J	7-L701	ES-349474	10-SW15
EI-332259	19-IC6	EJ-389980J	21-J3	EO-388353J	7-L702	ES-349474	10-SW16
EI-332259	22-IC7	EM-387624J	10-FL1A	EO-388362J	6-FL301	ES-349474	10-SW17
EI-337530	6-IC10	EM-387625J	10-FL1B	EO-388803J	6-L70B	ES-349474	10-SW18
EI-346071	6-IC201	EM-389833J	10-FL1C	EO-389410J	12-L1	ES-349474	10-SW19
EI-349719	22-IC5	EM-390786J	27-1	EO-389410J	12-L2	ES-373099	1-55
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EI-360396	28-IC5	EO-351184	22-L2	EO-389983J	19-FL1	ES-385174J	28-SW2
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EI-368809	11-IC1	EO-351866	6-L106	EO-390717J	19-L1	ES-390156J	10-SW21
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EI-372031	28-X1	EO-351869	6-L101	EO-391143J	19-OSC1	ET-308141	28-TR2
EI-373955	10-IC3	EO-353900	7-L705	EO-391267J	6-L405A	ET-308472	28-TR5
EI-373966	7-IC601	EO-354600	6-L401	EO-392805J	14-L1	ET-337759	28-TR4
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EI-381632J	7-X701	EO-368619	7-L707	EO-714055	22-L6	ET-353899	6-TR32B
EI-382827J	22-IC2	EO-373260	6-L71	EO-714055	22-L7	ET-353899	6-TR103
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EI-382833J	22-X2	EO-376179	6-L102	EO-714610	11-L5C	ET-353899	6-TR206
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